DEPARTMENT OF GAME, FISH AND PARKS
Regional Office
3305 West South Street
Rapid City, South Dakota 57702-8160

July 14, 2003

Elk Bugs and Fuel Project
Black Hills National Forest
ATTN: Carl Leland
US Post Office Room 201
18 South Mill Avenue
Ridgeway, PA 15853

Dear Carl:

Thank you for the opportunity to comment on this project. Please send us a copy of the EIS upon completion. We appreciated the vast information given in the tables and discussion. Thank you.

Alternative Development:

South Dakota Game, Fish and Parks (SDGFP) believes that none of the alternatives were developed to aggressively, efficiently and effectively treat the alleged bug and fuels problem in a meaningful and timely manner. The FS has staged this sensationalism and then the proposed treatments do not follow suit with treatments that are different than what has been done in the past, except for perhaps minor bug baiting and treatment trials.

We are very disappointed to read that the FS has entered this project area at least 40 times within the last 20 years and yet, there is NOTHING in any of the alternatives that even suggests that the rapid regeneration of pine will be addressed. Issues C (thin more areas, particularly small-diameter pine in Alt 4 for Wildland Urban Interface), D (Provide more grass, forb and shrub habitat in Alt. 3 for Wildlife Habitat), and E (maintain or create big game habitat in MA5.4 in Alt. 3 for Wildlife Habitat) were split between Alternatives 3 and 4 and yet all three issues directly relate to the needs (pages 8-9) to reduce susceptibility of vegetation to wildfire and bug outbreaks, sustainable commodity use and hardwood restoration. We cannot see the logic to split these needs and issues between the alternatives for wildlife habitat and wildland urban interface.

Further, we cannot determine a significant difference between treatments in Alt. 3 and 4 except that patch clearcuts and meadow restoration in Alt. 3 for wildlife

14-01

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habitat were not included in Alt. 4 for the wildland urban interface. And, some of the areas in Alt. 3 would be reduced to 60-70 BA vs. standard 80 BA for Alt. 4. We recommend that the two alternatives be combined, based on the information presented, since the acreage and treatment differences are so minor (various tables and figures). Unless there is better integration of the two alternatives that meet the needs to address bugs and fuels, a more radical reduction of small diameter pines below 80 BA, greater number of treated acres, we cannot support any of the alternatives for the various reasons given below. 14-02

Proposed Thinning is Nothing New or Different:

Other than the elimination of overstory removal and no proposal for shelterwood treatments, the commercial and non-commercial thinning are not different than any other project we have reviewed for BHNF. Thinning to 80 BA (or possibly less), even-aged treatments and park-like even spacing are just some of the many reasons that BHNF cannot keep up with the rapid pine regeneration on this forest and we were very disappointed to read you are proposing to do the same thing, again, with the preferred Alt. 4. We have heard FS experts at a recent Forest symposium lecture on the cons of keeping the forest stocked at 80 BA of even-aged SS3 stands. We don't believe you are listening to your own experts. 14-03

Treatment of Pine for Insects, fire, storm damage:

There is an apparent urgency by the Forest Service to treat stands in this project area to reduce potential bug, storm and fire risk. We have been dismayed at the continual sensationalism over natural phenomenon and media perception of how the Black Hills should be. For years, and more recently in the late 1990's, we have expressed our views on the need to break-up monotype pine stands, increase species and structural stage diversity, create and allow for uneven-aged management and create more openings. None of these alternatives address these needs and issues in a meaningful, long-lasting, effective manner. 14-04

Historically and presently, the general timber treatment and pine regeneration philosophy in the Black Hills has been aimed at reducing insects, disease and fire while simultaneously regenerating merchantable stock. We asked in our original scoping letter in December, 2002, to disclosure how effective and/or ineffective these past treatments (stocking rates, structural stages, BA and tree growth subsequent to logging) have been at successfully minimizing stand loss. The DEIS did not support any studies that have proven that these typical treatments are doing anything to significantly reduce bug and fuel threats. Quite frankly, what is being proposed that is any different and non-traditional than what has already been purported as effective treatment? 14-05

In our scoping comments we stated that the FS scoping document only pointed out potential natural causes that have led to these "catastrophic" conditions. Fire, bugs and storm damage will always be components of the ponderosa pine forests. Therefore, DEIS analysis should have clearly delineate man-made causes that also contributed to these conditions. We requested that the FS 14-06

Comment	Response
14-01	The planning team developed a range of alternatives in response to issues raised during scoping (Chapter 1, Issues). Rationale for the alternatives is discussed in Chapter 2, Alternatives Including the Proposed Action.
14-02	Thinning treatments proposed under Alternative 4 would thin stands from below to 80 square feet of BA or half the existing stocking, whichever is less. Commercial thinning, noncommercial thinning, prescribed burns, and fuel breaks would all decrease stocking of small-diameter pine (Chapter 2, Vegetation Treatments). Thinning of small-diameter pine was identified as Issue C (Chapter 1, Issues). Table 6 discloses acres of treatment proposed in small-diameter pine. The rationale for foregoing treatment of dense stands is disclosed in Chapter 2, Alternatives Considered but Eliminated from Detailed Study.
14-03	Stands thinned to a maximum of 80 square feet of basal area are less susceptible to mountain pine beetle-caused losses (Chapter 2, Alternatives Considered in Detail – Vegetative Treatments; Chapter 3, Biological Environment – Forest Vegetation – Affected Environment – Insects and Disease). Thinning objectives do not include the establishment of pine regeneration. Establishment of pine regeneration is not an objective of the project.
14-04	Proposed activities would not preclude future management actions to move toward uneven-aged stand conditions or diversity in stand age-class.
14-05	Ponderosa pine regeneration treatments are not planned under any of the alternatives. Stand susceptibility to mountain pine beetle-caused losses and the effects of proposed treatments are discussed in Chapter 3, Biological Environment – Affected Environment – Forest Vegetation – Insects and Disease; Environmental Consequences – Direct and Indirect Effects – Insects and Disease. The objective of the EIS is to disclose the effects of proposed activities.
14-06	Past actions that have contributed to existing conditions are discussed in Chapter 3, Biological Environment – Forest Vegetation – Cumulative Effects.

explain how proposed silvicultural and vegetation treatments will be planned and implemented differently and more aggressively than past treatments. We do not believe you have addressed the fuels and bugs needs and issues. Obviously the last 40 treatments in the past 20 years have not proven to reduce this treat or else the FS wouldn't have the needs and issues to conduct these treatments AGAIN. Please explain with supported documentation how these proposed commercial and non-commercial thins will better protect the forest and private lands from bugs and fire. 14-06 14-07

For example, data from Jasper, Battle Creek, Grizzly Gulch and other recent fires had stand inventory data and past timber treatment data. What areas in these fires had the lowest fire severity and intensities and what were the stand and site condtions that allowed for low severity and intensities? What treatment types had the highest fire severity and intensity burns? There are plenty of recent fires that lend themselves to comparison analysis and this was not addressed in the DEIS. This is completely remiss and the FS should be able to support treatments based on past experience. Please explain to the public why was this not assessed? 14-08

Thinning from below, whole-tree skidding, removal of slash from commercial treatments, reducing latter fuels and decreasing canopy cover may be valid approaches but we do not believe that the FS proposes to reduce overstocked stands nearly enough. This appears to be a band-aid approach and given the fast growth rate of pine, the FS will be back out in this project area in 10 years or less. 14-09

Timeliness:
We have concerns regarding implementation and asked in our scoping comments that it be addressed in the DEIS. We did not see this listed as an issue or need and ask why timeliness isn't part of the urgency formula considering the issues happening in the Deerfield-Bear Mt. Area? We ask again, how quickly will the treatments and logging be implemented after the Record of Decision is signed and appeal dates have passed? Will the sold contracts be allowed to "sit" until contractors find the most desirable timeframe to log or will there be time limitations on initiation and completion dates? Further, the FS did not address in the risk analysis: What are the interim risks to natural communities between the ROD signing and implementation, i.e.: will beetle and/or fire conditions stabilize (maintain) or become worse? 14-10

Bait and Sanitation:
Regarding new or fairly new proposed treatments, the DEIS proposed "bait and sanitation cutting". While the FS rationalized the treatment, you did not address our original questions and we repeat: What structural stages will be impacted by the bait (artificial attraction of bugs to an area) and sanitation cutting? Realistically, how quickly can field staff monitor the bait traps and rally cutting 14-11

Comment	Response
14-07	Stands experiencing intense beetle-caused mortality generally are dense and have had little or no recent treatment. In Chapter 3, the Biological Environment – Forest Vegetation – Affected Environment – Insects and Disease section discusses stand susceptibility to mountain pine beetle and past outbreaks of mountain pine beetle. The effects of the proposed treatments are disclosed in Chapter 3, Biological Environment – Forest Vegetation – Environmental Consequences. Protection of communities is discussed in Chapter 3, Physical Environment – Fire Hazard and Fuel Loading.
14-08	Factors affecting the intensity and severity of wildfires are discussed in Chapter 3, Physical Environment – Fire Hazard and Fuel Loading.
14-09	The EIS acknowledges that mountain pine beetle risk will increase in stands as trees grow. See Chapter 3, Biological Environment – Forest Vegetation – Environmental Consequences – Forest Insects.
14-10	If an action alternative is selected, the term of resulting commercial timber sales would be one to three years, depending on the size of the sale. Activities would probably be implemented in more than one sale due to the size of the area and scope of activities. Cutting units in a given sale may be prioritized for harvest based on the urgency of the treatment and local beetle populations. Implementation of non-commercial activities would depend on availability of funding.
14-11	Attributes of stands proposed for treatment are disclosed in Appendix D.

crews to remove the infested bait trees? What are the potential risks of attracting too many beetles and/or not responding effectively?

14-12

Shaded Fuel Breaks:
As stated in our original comments regarding "shaded fuel breaks", we found sketchy references on several FS websites and none of them defined which structural stage this treatment was most effective. One site emphasized how the largest and/or oldest ponderosa were left on site, as these trees were the most fire resistant. From the description in the DEIS, these treatments mimic the typical park-like appearance with grass understory along most major highways. We requested and reiterate that the FS must provide documentation that supports that this treatment is an effective fuel break since park-like areas along Grizzly, Battle Creek, Jasper, Rogers Shack and Elk Mt. fires burned, crowned and jumped major highways despite wide tree spacing. Did 200 foot buffers stop the above-referenced fires and if so, please better defend how this will help anything for fires.

14-13

Standard 3202: Big Game Screening:
We requested in our scoping comments and did not receive a reply but we are concerned about these shaded fuel breaks and lack of effective screening cover along arterial and collector roads. We may have law enforcement issues along some roads and by opening the canopy and losing adjacent escape cover, you may increase the opportunity for poaching and illegal activities. Please defend how the FS will meet 3202 **and** implement shaded fuel breaks.

14-14

Cumulative Impacts on 111,258 acres or 9.3% of the entire BHNF:
Thank you for disclosing the name, date and treatment types of past timber sales and silvicultural projects. Thank you for presenting current structural stages and what percentage consists of late successional and old growth pine and spruce trees, meadows, openings, shrubs and hardwood stands.

However, the cummulative impacts on 9.3% of BHNF by past and this proposed action were not fully developed since the DEIS did not model what those past treatments did to address the needs and issues of bugs and fire. Did they add to our current problems? Past treatments generally attempted to eradicate aspen (we have file photos of aspen destruction and pine plantings) or to provide token restoration. Few treatments addressed the diversity issue of loss of deciduous shrubs. And, the preferred alternative 4 continues to decrease diversity by ignoring meadows and forest openings. This was not discussed in the analysis and is significantly lacking, only adding to the biodiversity issues plaguing this forest. Please address why or why not the FS chose to ignore the impacts of past and proposed treatments to vegetation diversity.

14-15

Nearly one-third of the FS lands occur on MA5.4. Again, by ignoring meadows, openings, and a reduction of BA in Alt. 2 and 4, it polarizes issues of "forest

Comment	Response
14-12	Sanitation cutting and timing are discussed in Chapter 2, Vegetation Treatments. Sanitation cutting has taken place within the required time frame in the past on the Northern Hills Ranger District, and baiting further increases the effectiveness of this treatment (Chapter 2, Vegetation Treatments – Sanitation Cutting – Bait and Sanitation Cutting; Commercial Thinning, Bait and Sanitation Cutting). A large number of beetles attracted to a site would reflect successful treatment and would decrease mortality in other areas of the forest.
14-13	The EIS includes statements regarding intent of shaded fuelbreaks and their surface and canopy fuel structure (Chapter 2; Chapter 3, Physical Environment – Fire Hazard and Fuel Loading). Statements have been clarified in the FEIS.
14-14	Revised Forest Plan standard 3202 pertains to creation of barriers to movement of wildlife and people. Standard 3203, which requires a minimum of 20% screening along arterial and collector roads, would be met via mitigation under all alternatives.
14-15	Table 75 displays cumulative effects of past treatments in regard to mountain pine beetle risk. Forest vegetation diversity is discussed in Chapter 3, Biological Environment – Forest Vegetation – Environmental Consequences – Direct and Indirect Effects – Stand Diversity; and Cumulative Effects – Alternative 1, and Alternatives 2, 3, and 4.

health and public needs" against "wildlife" when in fact the two generally could be closely correlated for this particular project. Granted, some species benefit by dense pine stands, others do not. Two of the purposes and needs of this project are to address bugs and fire: therefore it is illogical that 1/3rd of the project area will not have considerations for structural diversity by increasing meadows (fire breaks), creating forest openings (fire breaks) and reducing bug bait (80 BA+). Please explain why the FS chose to keep Alt. 3 as a separate issue when Alt. 3 treatments will arguably address or exceed the same issues in Alt. 2 or 4. The FS charts on proposed acreage treatments differ very little among alternatives. Why not offer a more effective, efficient and meaningful alternative and combine Alt. 3 with 4? Please explain why the FS cannot combine alternatives 3 and 4. 14-16

Proposed Vegetation Treatments:

Non-commercial Pine Treatments: Alternatives should include more aggressive treatment of non-commercial pine. Between Alt. 3 and 4, Non-commercial thinning is only planned on only 2219 acres (5% of 41,624 acres pine covertype) for Alt. 3 and Alt. 4 (2347 acres or 5.6% of pine covertype). We do not consider .4% a significant difference between alternatives and ask the FS to defend how these alternatives differ. How is a .4% difference a better "wildland urban interface" treatment? We also do not believe that either address potential, future bug problems, current fuels problems or forest biodiversity issues. This is a prime example of the discussion text polarizing alternatives that truly should be no different in effectiveness. Please explain to the public how either alternative will better defend adjacent private lands (alt. 4) vs. better wildlife habitat (alt. 3). 14-17

Lack of slash removal in non-commercial treatments may be subject to *ips* outbreaks in surrounding live trees. If discussed in the text, we did not see it but, please explain *ips* life history and potential impacts to remaining, small diameter live pine. 14-18

Commercial Pine Thinning: Alternatives should have been more aggressive of small diameter commercial pine (6–13" dbh). Originally you proposed less than 25% of the project area. You rationalized reasons for removing some areas due to goshawk standards, but never the less; the remaining acreage certainly could have been treated more aggressively. Alt. 4 only proposed 6312 total acres or 15% of 41,624 pine covertype acres. Alt. 3 is even less. Isn't this regressing in effective treatments?

We have been told by Forest officials that the average dbh currently coming off the Forest equals 13.1". Either the Forest has been aggressively removing small diameter pine or there is an imbalance of structural stages within the suitable timber base and over stocked stands of small diameter pine. If, in fact, there is a fire and beetle danger on 89,611 acres, it seems that more than 15% of the pine covertype area could be treated in addition to more hardwood treatments, meadow enhancements (lacking in alt. 4), forest openings (patch cuts lacking in alt. 4) and lower BA's in Alt. 4. Please defend and explain to the public how 14-19

Comment	Response
14-16	The planning team developed a range of alternatives in response to issues raised during scoping (Chapter 1, Issues). Rationale for the alternatives in response to issues is disclosed in Chapter 2, Alternatives Including the Proposed Action.
14-17	Commercial and non-commercial thinning and fuel break treatments would thin from below, removing the smallest trees in the stand (Chapter 2, Biological Environment – Vegetative Treatments – Commercial Thinning, Non-commercial thinning, and Shaded Fuel Breaks treatment descriptions; also see Table 6, Issue C, Small-diameter Pine Stands Thinned. Acres that would be treated within a half-mile of private property are disclosed in Table 6, Issue F.
14-18	The pine engraver beetle (*Ips* spp.) is discussed in Chapter 3, Biological Environment – Forest Vegetation – Affected Environment – Insects and Disease; Environmental Consequences – Direct and Indirect Effects – Forest Insects.
14-19	In addition to activities proposed under the modified proposed action and alternatives, there are on-going activities in the project area associated with P.L. 107-206, and the Boulder, Redhill, Piedmont, Kirk, Cavern, and Dano timber sales. These activities are summarized in Table 72, Acres of Vegetation Treatment within the Elk Bugs and Fuel Project Area. The effects of the proposed activities on pine regeneration are discussed in Chapter 3, Biological Environment – Forest Vegetation – Environmental Consequences – Stand Structure and Stocking; and Cumulative Effects.

removal of commercial pine on less than 15% of the project area will even keep up with or reduce pine regeneration currently happening on this Forest? 14-19

We do not believe that the answers to reducing beetle outbreaks and reducing catastrophic fires lie in cutting late successional, large and/or old growth pine or creating large-scale acreages of monotype forests. We thank you for showing the post-treatment structural stages for all alternatives. We support not cutting these "remnant" stands (as described by the DEIS).

We requested that an alternative offer variable thinning for north-facing and south-facing slopes and take into consideration current understory conditions with timber treatments aimed at increasing grasses, forbs and shrubs for wildlife. This was offered in Alt. 3 but we are disappointed that it was offered as a polarizing view to "public protection in the wildland urban interface" when in fact, lower BA and densities are exactly that – more protective. Please defend and explain to the public how 80+BA is more fire safe (DEIS: Page 136-137: "Alt. 4 thins from below to 80 sq.ft BA or ½ existing stock, whichever is less, uniform spacing and stocking. This is right out of the old silvicultural textbooks!!) and less bug prone (alt. 4) than 60-70 BA (alt. 3). We argue that lower BA's have merit for both issues of bugs and fire. Please explain to the public why wildlife needs at lower BA's somehow conflict with public safety and forest health. 14-20

Page 138. Even-aged management.
Justification for these treatments is only defined in terms of silviculture, not ecology, and the FS has latitude to go outside of typical silvicultural treatments. FS can take Forest Plan Amendments in order to achieve meaningful fuels reductions. We have not read one thing in this DEIS that suggests that the FS is going to aggressively conduct anything new and different. The same treatments that helped bring conditions to the current state of "epidemic, catastrophic conditions" are again proposed.

Table 62 discusses cover types stocked with ponderosa. How many of the ponderosa and spruce stands are incorrectly typed as a conifer and not as hardwood stands and/or inclusions? Please discuss opportunities to remove hardwood stands from suitable timber base following restoration. Therefore, those stands should be correctly typed as hardwoods and pine is not obligated to regenerate within 5 years. This should be discussed in the DEIS as it directly pertains to forest health, bugs and fire. 14-21

Average Maximum Density (AMD): We compared various information in the DEIS as indicated below. We don't understand several things and ask for explanation.

Stocking In Alt 4 only	Pre-treatment Acres	Post-treatment Acres

Comment	Response
14-20	Stand stocking and mountain pine beetle risk are discussed in Chapter 2, Vegetation Treatments – Commercial Thinning; and Chapter 3, Biological Environment – Forest Vegetation – Affected Environment – Insects and Disease. The EIS discusses projected fire behavior and hazard ratings by alternative and how these were determined (Chapter 3, Physical Environment – Fire Hazard and Fuel Loading). Clarification of fire hazard ratings has been added to the FEIS.
14-21	Cover type is based on data in the district RMRIS database. Cover type reflects the tree species with predominant basal area in the stand. Where discrepancies were found during field reconnaissance, the database was updated to more accurately reflect site conditions. The district vegetation database will be updated as necessary upon implementation of the selected alternative.

60% AMD	11,094 = 27%	9,770 = 23%
40-59%	8,629 = 21%	9,652 = 24%
0-39%	7,396 = 18%	21,470 = 53%
	27,119 = 66% of **41,089**	**40,892** acres

First, pre-treatment acres indicate 66% of 41,089 acres are found in the three AMD classifications. Post-treatment indicated how many total acres would fit the AMD classifications. Why aren't the total acres (in bold) the same number? 14-22

Secondly, only 4% decrease in AMD class 60+% is proposed to be treated in Alt 4 which is to address WUI. Please defend how only reducing 60% AMD by 4% and 40-59% reduction by 3% will treat bugs and fuels issues on a significant basis to provide the public the perceived forest health and safety that Alt. 4 proposes. The only significant difference is treatments will add to the 0-39% category by an increase of 18% to 53%. But, this is a treatment difference of 14,074 acres (21,470 – 7,396 acres). Where did these treated 14,074 acres come from when Table 5 total treated acres for everything only adds up to 11,213 acres? 14-23 14-24

Thirdly, Table 59, page 120 indicates 41,624 acres covertype ponderosa of NF lands. Page 125 indicates 41,089 acres covertype ponderosa in the AMD classifications. Table 70, page 136 indicates 40,892 acres, Alt. 4 in covertype ponderosa. (Alt. 3 = 40,891, Alt. 2 = 40,844 acres). How can these acreages vary by up to nearly 800 acres? Please explain. 14-25

Hardwood Treatments: Our agency is on record of advocating hardwood treatments. We applaud proposals to release hardwoods, remove all pine from hardwood stands and create a buffer of 120 feet from the outer-most hardwood stem. However, after several field trips with Dr. Dale Bartos, Aspen Ecologist, USDA Forest Service, Rocky Mt. Research Station, Utah, it is imperative that you have an actual hardwood treatment plan with specifics by how each stand/clone will be treated. We strongly recommended in our scoping comments that you assess the current health and status of individual clones before you start cutting "old" aspen to stimulate sprouting. Genetics, weather, timing, protection and follow-up treatments (such as Rx burning and livestock grazing) will cause various treatment responses and you cannot expect the same response between clones. You may inadvertently cut too many aspen and not have successful regeneration and in doing so, have reduced or eliminated the residual mature stems. Also, some Rx burns carried out in the Black Hills have not had proper timing and regeneration was burned off. 14-26

"Low-intensity" fire is often used as a tool to stimulate growth of some hardwood species. Past treatments employing cool fires have been unsuccessful and were not hot enough to stimulate aspen/birch suckering and shrub sprouting. Some treatments did not have enough fuels to carry fire. Also, without fencing and/or slash barriers, regeneration could be severely removed by wild and domestic ungulates. While good intentions to regenerate hardwoods in the Black Hills 14-27

Comment	Response
14-22	Table 70 has been updated. Table 70 reflects estimated post-treatment stocking for all stands.
14-23	Table 70 has been updated. Effects of proposed treatments on mountain pine beetle are discussed in Chapter 3, Biological Environment/Forest Vegetation/Environmental Consequences/Insects and Disease (last paragraph).
14-24	Table 70, Post Treatment Ponderosa Pine Stocking, shows the stocking of all ponderosa pine stands in the project area. Treatment may not change the stocking class of a stand (example: a stand at 78 BA thinned to 39 BA would not change stocking class; it is currently in the 0-39% AMD class and would remain in the 0-39% class). Acreage figures in Table 62, Stocking by Covertype are based on the most current RMRIS data. There is no AMD information in the database for 14,093 acres of ponderosa pine covertype (column titled "No Data"). Table 70 reflects estimated post-treatment stocking; post-treatment stocking was estimated for all sites for each alternative.
14-25	Table 70 has been updated.
14-26	If an action alternative is selected, a District silviculturist will prepare site-specific stand prescriptions prior to implementation. No coppice treatment is proposed in hardwood stands, other than prescribed burning (Chapter 2, Vegetative Treatments/Commercial Hardwood Restoration and Non-commercial Hardwood Restoration).
14-27	Hardwood stands would be monitored after burning. Monitoring would determine the need for additional measures to protect regeneration.

have been applied in the past, some have been successful and some have been complete failures. Failures are too high of a risk when aspen needs disturbance to regenerate and loss of a clone is loss forever. Unsuccessful hardwood treatments are an incredible waste of highly coveted monies and we recommend that you consult more recent research to determine best management practices to stimulate and protect suckering of aspen and birch. Please consult Dr. Bartos and/or myself for recent aspen treatment literature. 14-27

The scoping letter purports hardwood stands as "less flammable". We agree. However, upon reviewing the acreage proposed for hardwood restoration, we question why only 323 acres (20%) of commercial and non-commercial treatments in 1650 acres of hardwoods will be treated. Please explain why so few acres will be treated when it is known these vegetation types are less flammable and add to scenic value of viewsheds. 14-28

DEIS Page 136-137: These pages conflict greatly with the identified needs and issues for hardwood restoration. It appears different parties wrote this section compared to the issues and needs and values of hardwoods to wildlife. Please review and be more consistent. Pages 136-137 are incorrect and disturbingly false for hardwood ecology in the Black Hills. DEIS stated, "....aspen and birch IN THE UNDERSTORY would release...." Why is aspen and birch in the UNDERSTORY? It can't release if it is dominated by pine. It needs to become the OVERSTORY. "...pine will be REDUCED..." Why isn't pine being REMOVED these sites? Pine out competes hardwoods, you can't just thin the pine you must REMOVE ALL THE PINE or else do not call these "hardwood restoration treatments" as you won't restore anything. Selected removal of pine won't do it – never has before and won't in the future. BHNF is testimony that mixed stands do not make for unique, hardwood ecosystems. There should not be "scattered, mature and over-story pine" in these hardwood stands. Who wrote the ecology of this paragraph because they do not understand that mature pine trees will shade the hardwood understory, pine will provide a readily available pine seed source to start the pine cycle again and type convert the stand, and lastly, pine will carry a fire in hardwoods, especially in small clones or inclusions. Jasper, Battle Creek and Grizzly Gulch fires all proved this. You have not solved a thing for fire, fuels or diversity. 14-29

Also, the DEIS proposed a Rx burn too hot as it will kill most of the mature hardwood trees!!!! Why would you burn the hardwoods so hot that you kill the overstory? You are essentially conducting a hardwood clear cut which is no longer considered acceptable hardwood treatment on BHNF (Bartos and Shepperd, FS Aspen Researchers, do not promote clearcuts on BHNF!!!). This is not Minnesota where hardwoods are abundant. This proposed Rx is an incredibly irresponsible practice and provides NO insurance that the hardwoods (only 4.5% of covertype) will even resprout or survive to a mature status. This is not the type of prescription that hardwoods should have in the Black Hills. Page 138 states that aspen, birch and oak would survive in the understory and mid- 14-30

Comment	Response
14-28	Approximately 821 acres (50%) of aspen have been regenerated in the project area since 1980, and an additional 54 acres (3%) are planned in ongoing projects (Table 66).
14-29	Aspen is a seral species on 18,824 acres in the project area, and many pine stands on these sites have remnant aspen in the understory. Plant associations are listed in Chapter 3, Biological Environment/Forest Vegetation: Table 60 – Habitat Types and General Characteristics. Leaving some conifers retains existing within-stand tree species diversity, and is consistent with Revised Forest Plan direction. Standard 2205 states: "*When treating mixed conifer/hardwood stands to meet the hardwood restoration objective (201), leave no more than 10 overstory conifers per acre, and treat the conifer understory and hardwood component in order to shift the dominance of basal area from conifer to hardwood."*
14-30	Clearcutting or coppice regeneration methods are acceptable management options for aspen. See Revised Forest Plan standard 2408. The acceptable mortality from prescribed fire described in the EIS represents the maximum allowable mortality in conifer stands. Statements have been added to clarify the use of prescribed fire in hardwood stands (Chapter 3, Physical Environment – Fire Hazard and Fuel Loading).

story of pine. If all we wanted was "survival" of a few token hardwood museum specimens, you already have it. We need full functioning, healthy hardwood systems with viable populations of aspen and hardwood obligate species, not more mixed stands. You have NOT conducted the most local and recent applicable literature. Rumble et al. clearly documented that leaving pine in hardwood stands does NOT add to bird diversity (Rumble, M.A., L.D. Flake. T.R. Mills and B.L. Dykstra. 2001. Do pine trees in aspen stands increase bird diversity? USDA FS Proceedings. RMRS-P-18. In Shepperd, W.D. et al., compilers. Sustaining Aspen in Western Landscapes: Symposium Proceedings, Grand Junction, CO.). Over 3 studies have been done on understory diversity of pine stands vs. aspen here in the Black Hills (see hardwood section for Phase II analysis at the Supervisor's Office for citations) and they clearly show that hardwoods have many more understory species than pine or mixed pine stands. 14-30 14-31

The FS should NOT want to kill "most" of the mature hardwood trees. What if the stand doesn't regenerate? What if herbivores, disease and frost take the regeneration? This is the same old, same old. Please defend this hardwood treatment section and clearly explain to the public how this will address issue D and Needs #6 in a scientifically sound manner. 14-32

Wildlife and sensitive species:

MA 5.4 and MA 3.31 - HABCAP and Deer and Elk Habitat Management Direction:

One desired future condition of MA 5.4 is to create or maintain big game habitat on the National Forest so that time spent by these animals on private lands may be reduced (1997 BHNF LRMP). We appreciate that creating openings (patch clear cuts) and meadow enhancement were identified as a need in the DEIS for one-third of the treatment area. However, why wasn't this need also considered in Alt. 2 or 4? There is no reason why this need should conflict with goals of Alt. 2 and 4. Please explain why the FS decided that forest openings do not address the bug and fuels issues outside of Alt. 3? 14-33

Before timber treatments are applied to MA5.4, it is highly recommended that analysis consider potential outcomes of timber treatments and juxtaposition to private property. If timber treatments do not improve big game habitat (of which many other species also benefit) or worse, degrade habitat requirements, those animals may utilize private lands to a greater degree. This would not speak well for the Forest as a neighbor and could cause GFP to field more complaints and depredation issues. Management area 5.4 is supposed to be different than MA 5.1 and as proposed, we do not see how 5.4 will reflect a difference or will be better in Alt. 2 or 4. 14-34

Page 179-180. Big Game Habitat Effectiveness. We are not familiar with HE vs. HABCAP. The DEIS states that "road density is the primary limiting factor in the project area" which we argue is incorrect. Based on numerous deer studies (in 14-35

Comment	Response
14-31	Hardwood maintenance and restoration treatments that remove pine were proposed in all aspen stands not identified as high-potential sensitive plant habitat.
14-32	Prescribed burning is an acceptable method of regenerating aspen (DeByle and Winokur). The effects of burning hardwoods are discussed in Chapter 3, Biological Environment – Forest Vegetation – Direct and Indirect Effects – Stand Structure and Stocking – Stand Diversity. Burned hardwood stands will be monitored to verify adequate stocking and determine if protection measures are needed for regeneration.
14-33	The proposed action was originally designed in response to the purpose of and need for action described in Chapter 1. A range of alternatives was developed in response to significant issues raised during scoping (Chapter 1, Issues). Rationale for the alternatives in response to issues is disclosed in Chapter 2, Alternatives Including the Proposed Action.
14-34	Treatments proposed in MA 5.4 are expected to improve foraging habitat on National Forest System lands, including those adjacent to private lands. With improved forage conditions, wintering big game are more likely to remain on federal lands.
14-35	The EIS section addressing big game habitat states that forage condition (i.e., lack of shrubs, hardwood stand conditions, and early seral vegetation) has been implicated in decreased herd numbers in the Black Hills. Treatments in Alternative 3, most specifically, are designed to improve foraging habitat. The statement concerning roads as the primary limiting factor for big game is related to the HABCAP model and the weight given to open road densities when assessing habitat effectiveness. This statement has been re-phrased in the FEIS.

addition to the ones cited on page 179), that lack of shrubs and quality fawn cover are more limiting factors, roads being close behind due to loss of habitat acres by roads and buffer. We have supplied this information to the FS Supervisor's office for Phase II amendment and our original scoping comments referred you to that document. Did the FS ask for a copy of the Phase II deer and elk summary write-up co-authored by BHNF and SDGPF? If not, why not? 14-35

Summer habitat conditions are so limiting and depleted in the project area, that our biologists contend that deer leave the project area much earlier than historically recorded and head to winter range too soon. This is more of a limiting factor to healthy deer. Since deer and elk are MIS, we believe that the FS should have offered more meadow enhancements and patch clearcuts in all alternatives, not limited to alt. 3. BHNF certainly can take a Significant Forest Plan Amendment to reduce those high density pine stands that HABCAP requires with the current forest plan. Our agency contends that quality, abundance and distribution of forage is more limiting to deer and elk than thermal cover in the Black Hills. We do not believe that the preferred alternative incorporated better silvicultural treatments to improve deer habitat. These two deer MIS indicate the health of hardwoods and deciduous shrubs, open spaces and all the other plant and animal species associated with these communities. It is the lack of these same communities that adds to the problems associated with pine fuels and pine insects. The correlation is very clear and yet the preferred alternative ignores this association. Again, this DEIS is nothing more than the same old thing. 14-36

As stated in our scoping comments, for several years, wildlife biologists from both the FS and GFP have not been satisfied with the HABCAP model used for deer and elk. In fact, HABCAP as related to deer and elk habitat management is a Phase II revision topic of the Forest Plan Amendment. HABACAP coefficients include forage, cover and proximity to roads. It overestimates cover and severely underestimates forage. Because the non-significant Plan Amendments propose to alter deer and elk habitat effectiveness, we request that a meeting be arranged between BHNF biologists, GFP biologists and Dr. Mark Rumble of Rocky Mt. Research Station, to discuss possible mitigation of these Plan Amendments. Dr. Mark Rumble, USDA RMRS, Rapid City, SD (605-394-1960) should be consulted on elk HABCAP modifications he has developed. He is also knowledgeable of problems with the model's weighted coefficients. He has been involved in improving this model for many years. He is also a local expert on turkey habitat requirements. 14-37

Mt. Lion (MIS) Habitat: We highly disagree that mt. lion habitat would not be affected by any alternative (page 183) and find that the FS does contradict its own statement by stating "management actions are expected to have some impact on habitat suitability for big game (page 186)." So, either there will be impacts or there won't be impacts. Which is it? Because deer are the main prey species, vegetation impacts (positive or negative) to deer habitats will directly 14-38

14-36	The EIS states that forage conditions within the project area, and on the Forest in general, require improvement. Treatments, including hardwood maintenance, prescribed fire, thinning, precommercial thinning, and patch cuts and meadow maintenance in Alternative 3, are expected to increase available forage. In addition, road closures are expected to increase available habitat.
14-37	Modifications of the HABCAP model as related to the Phase 2 Amendment are outside the scope of this project.
14-38	The EIS states that all action alternatives would improve habitat conditions for big game as measured by the habitat effectiveness index. Improved big game habitat is expected to improve prey base for mountain lions.

impact its predator. For example, Alt. 4 is not likely to significantly improve deer habitat due to lack of inclusion for patch clearcuts and meadow enhancements and BA at or above 80 BA. Therefore we argue that alternatives will affect mt. lion habitat because they will also affect deer habitat. Please provide local and supportive documentation that differs from our assessment. 14-38

Travel Management:
We appreciate disclosure of proposed activities to roads. We support closure of user-created trails and roads. It was not clear in the DEIS the disposition of new roads and road reconstruction. Please better explain: will these be permanent or temporary roads? If permanent, please defend program needs to create more roads. And, if permanent, the net reduction of roads (new roads vs. road closures) in the project area needs to be better discussed. 14-39

Other Concerns:
How will this project be impacted by the Phase II Forest Plan Amendment, the Bush Administration proposal for Forest Planning Regulations and Congress' Healthy Forests Initiative? 14-40

As stated in our scoping comments: What are the KV projects? None were listed. After discussing timber treatments and travel management, we may offer some ideas and possible opportunities for challenge cost-share. 14-41

Did you contact our Pierre office (Doug Backlund: 605-773-4345) to discuss the Natural Heritage Database, which tracks non-game, sensitive species and botanical species? We saw no reference to such but may have missed it. Also, please consult with our botanist and ecologist, Dave Ode (605-773-4227) for floral information. Was he consulted and if so, please reference consultation with SDGFP personnel in the FEIS. If these SDGFP staff members were not consulted for information on natural heritage database (which does have some similar species to FS R2 Sensitive species list), please explain why not. 14-42

Page 147. Long-term effects of cattle grazing on regenerating aspen IN THE BLACK HILLS was lacking until this study was published. **FS took the Rumble et al. citation out of context.** The cited study was designed to look at long-term impacts (19 years at time of publication) by herbivores, including cattle. DEIS took an incorrect assumption of the conclusions of this study which was funded in part by SDGFP. Please correct your interpretation and restate that prior to Rumble et al., long-term impacts of livestock grazing in the BLACK HILLS were lacking. Information isn't lacking now and hasn't been lacking across other western states. Thank you. 14-43

Page 32. Please send us a copy of the final monitoring report of project implementation. 14-44

Comment	Response
14-39	All roads constructed would be permanent roads. The interdisciplinary team determined that proposed treatments would meet Revised Forest Plan direction and the purpose of and need for the project; the additional roads are necessary to reach the proposed treatment areas. Refer to road density charts in the Transportation section of Chapter 3 for a comparison of open roads to closed roads.
14-40	The alternatives considered in the EIS were designed to be consistent with existing laws, regulations, and the Revised Forest Plan, including the Phase 1 Amendment. At this time, there are no foreseen impacts to this project related to the Phase 2 Forest Plan Amendment, changes in National Forest planning regulations, or the Healthy Forests Initiative.
14-41	All proposed activities are listed in Chapter 2: Vegetation Treatments, and Transportation Activities. Funding of the proposed activities would be determined at the time of implementation.
14-42	A list of species tracked by the South Dakota Natural Heritage Program was requested and received for the Northern Hills Ranger District in February 2003.
14-43	The citation has been removed.
14-44	A copy of the final report on monitoring of project implementation will be sent to the commentator upon completion of project activities.

Table 40. Please explain and reference this table. Convert "ch" and "chains" to feet for us non-silviculture types. 14-45

Pages 88-89 on Fire, Fire History, etc. OK for first run draft but many mistakes.
- Black Hills frequently not capitalized.
- BHNF Fire Management Plan, 2002, not cited in the back reference section.
- Agree 1993 worked in the Pacific Northwest. Please defend how ponderosa pine in the Pacific NW can be scientifically compared to ponderosa pine in the drier Black Hills
- Please specifically cite which "Brown and Siegs" work you reference. Also, Siegs is "Sieg". We don't believe you actually read all their works and Brown's work in the Black Hills. Please read their works and cite correctly.
- Biswell et al. 1973 is from central Arizona. Please cite in the reference section. How does central Arizona pertain to BHNF?
- "graves report" should be capitalized, it is a name, not a cemetery. Please cite Graves report in the reference section.
-Baker and Ehle 2001 not cited in the reference section.
- Better explain how Baker and Ehle require 50 years no fire for pine regen but Covington and Moore suggest 40 years. Why the difference and what is more applicable (if either) to BHNF?
- There were other historical fires in the Black Hills. We enclose copy of an old document from a previous FS Ranger. 14-46

Page 93 Surface Fuels: Understory description of "grass with some downed woody material is the dominant ground vegetation in most sites, with needlecast and Juniper mixed in throughout the project area." This highly suggests lack of fire disturbance (ie: juniper and needle cast), severe lack of forbs and shrubs, and devoid of vegetation diversity. Therefore, please explain why the FS is not implementing more vegetation treatments for increasing biodiversity in ALL alternatives? Species of viability concern do not subsist on needle cast. Meadows, openings, sunlight to the forest floor (low BA's) all will help increase vegetation biodiversity AND meet bug and fuel issues. 14-47

Page 96, Cite the "Protecting People....." in the back reference section. 14-48

Table 53. We find it interesting that this table, and other similar information, has yet to describe ONE stands as Condition Class 3. Please explain why there is lack of this dangerous class in the data but discussion leads one to believe the forest is ready to combust. We agree many overstocked stands have high potential for crown fires, but the data suggests differently and the alternatives do not significantly reduce these condition classes to less dangerous situations. Please explain to the public how this seems contradictory in terms of data vs. treatment effects. To what level will these treatment lower the condition classes and for how long? 14-49

Comment	Response
14-45	Table 40 has been changed from chains to feet for clarity.
14-46	The planning team reviewed scientific documents concerning ponderosa pine ecosystems throughout the western U.S. Although variation exists from one location to another, it is a common practice to use scientific documents in this manner. Requested citations: Brown, Peter M., and Carolyn Hull Sieg. 1996. Fire History in Interior Ponderosa Pine Communities of the Black Hills, South Dakota USA. Int. J. Wildland Fire 6(3) 97-105. Biswell, Harold H., et al. 1973. Ponderosa Fire Management. Tall Timbers Research Station, Tallahassee, Florida.
14-47	The proposed action was originally designed in response to the purpose of and need for action described in Chapter 1. A range of alternatives was developed in response to significant issues raised during scoping (Chapter 1, Issues). Rationale for the alternatives in response to issues is disclosed in Chapter 2, Alternatives Including the Proposed Action.
14-48	The cited reference has been added.
14-49	Table 53 displays the resulting condition class only for stands that have been treated or are planned for treatment. This represents only a percentage of stands within the project boundary. The EIS describes the resulting change to condition class, and states that each condition class represents a range of values. Limitations on treatment of high hazard areas are discussed in Chapter 3, Physical Environment – Fire Hazard and Fuel Loading. Treatment effectiveness is displayed in the same location. A map of condition classes has been added to the map set.

Summary:
Forest health as presented in this DEIS was identified by the FS as bugs and fire. While we appreciate an alternative to incorporate MA5.4 and other wildlife needs, such as more forest openings and less dense stands, these wildlife treatments were offered at the expense of meeting bug and fire issues and vice versa. We acknowledge all needs and issues cannot be met on every square inch of BHNF but the alternatives could have offered a much better, comprehensive plan. 14-50

We support forest management and understand the controversy surrounding forest health issues and large-scale stand replacing events. We appreciate how management impacts neighboring lands. Our agency has repeatedly commented on the two most important structural stages for wildlife, sensitive species and T&E species: early and late successional. There is a close correlation with forest health with presence/absence and abundance of these two structural stages. Therefore, please explain how the FS made the determination that these particular wildlife needs are mutually exclusive to bug and fuels issues? 14-51

We do not appreciate constant polarization and no supportive documentation from the FS as to why many wildlife treatments cannot benefit and justify several of the needed fuels and bugs treatments, vice versa. The bug and fire sensationalism could be better met if the FS were actually going to do something different than even-aged, even-spaced stands with 80 BA. **There have been over 40 timber sales in the project area in the last 20 years alone. This DEIS is no different and the FS will be right back in here within 10 years or less.**

We cannot support any of the alternatives as meeting the majority of any needs and issues identified in this DEIS. We feel a combination of Alt 3 and 4, and additional treated acres, as pointed out, would better serve the bugs and fuels issues and clearly address many wildlife issues. Otherwise, the alternatives are all "business as usual" with forest health promises made to the public that cannot be defended. Thank you again for the opportunity to comment. 14-52

Sincerely,

Shelly Deisch

Shelly Deisch
Wildlife Biologist
Public Lands Liaison

cc: John Kirk, Pierre
enc: Historic Forest Fires BHNF 1931-1941.

Comment	Response
14-50	The range of alternatives was developed in response to significant issues raised during scoping (Chapter 1, Issues). Rationale for the alternatives in response to issues is disclosed in Chapter 2, Alternatives Including the Proposed Action.
14-51	The planning team does not believe that maintaining early and late successional habitats and reducing stand-level disturbance are mutually exclusive goals. All structural stage 5 and most 4C and stands would be exempt from stand-altering treatments. The action alternatives treat 3% or less of project area 4C stands. Therefore, most of these stands would remain available for species that require this habitat type. All action alternatives would increase structural stage 4A and implement prescribed burning treatments, increasing available big game forage as well as accelerating tree diameter and height growth for transition into future stands of large trees with open understories. The planning team did not believe that clearcutting within the Elk Bugs and Fuel Project Area was warranted at this time given the lack of large trees on the landscape and the presence of past overstory removal units that remain in early seral condition. The proposed action was designed in response to the purpose of and need for action described in Chapter 1. Alternatives were developed in response to issues and are described in Chapter 2. Alternative 3 was developed in response to issues D and E, which are related to wildlife habitat. The team did not determine that wildlife habitat and insect infestation/fuel hazard issues are mutually exclusive.
14-52	Table 6 displays a comparison of the alternatives in relation to significant issues identified through public scoping. Chapter 2 provides a narrative summary comparison of the alternatives by resource area.

Record of Large Fires 1931-1941

Bloody Gulch	1934	567 acres
Black Fox	1934	653 "
Ross Allen	1935	437 "
Scott	1936	7,338 "
Sundance	1936	8,361 "
Johnston	1936	760 "
4th of July	1936	1,227 "
Galena Mill	1937	1,181 "
McVey	1939	21,857 "
Matt	1940	577 "

Record of Iron Creek Burn - 1899

The following letter from Ranger M.B. Ocuinbaugh to Supervisor H.G. Hamaker constitutes one of the best available records of a serious fire in the early years of forest administration. Except for the detailed record of the payroll it is quoted in full. During the course of the fire 18 men were employed for an aggregate of 334 man hours, payment for which was at the rate of 25¢ per hour.

Leppla and McLaughlin Tie Camp
Iron Creek, S. Dak.
September 20th, 1899

Hon. H. G. Hamaker
Forest Supervisor, G.L.O.
Custer City, S. D.

Sir:

I am submitting to you the following report of the timber or forest fire in District No. 13. I trust that the same may meet with your approval.

On the 24th day of August, 1899, in the morning, I was notified that a forest fire was in progress west of Crow Peak. I immediately started for the scene, and arrived there as soon as possible. I commenced fighting the fire upon the west, hoping to be able to keep it from spreading to the westward. I worked at it constantly during the day and night, and found on the next morning (August 25th) that it had not materially gained any headway to the north and west, but during the day a strong wind arose which caused it to burn fiercely. I commenced to work east along the south line of fire hoping to get help. I reached Shudy's sawmill where I employed three men, and on my way to the fire (which was then on the divide north of the sawmill) I met and employed five more men. Altogether we started to work and accomplished considerable good, but the majority of the men, after a few hours work, stopped and went home, leaving me with only three men for the night.

On the next morning (August 26) a strong wind was blowing from the west, which again started the fire, and afterwards switched to the south, carrying the fire to the north and est at a Furious rate. On the south and east the fire was under complete control.

Feeling that all danger to that part of the country was past, I started to Spearfish to notify you of the condition of the fire,and then returned to the west line which was burning beyond control, and covered a territory as near as I could judge of 5 miles square.

On the morning of the 27th I returned to town, and learned that you were expected there that day. Upon your arrival I notified you as to the status of the fire and that the same was under control on the east side and was doing no material damage to other than the brush and down timber, not affecting the standing and growing timber. Having been without sleep and rest since the night of the 23rd I did not leave my bed until the next night (August 28th).

Upon my return to the west line of the fire on the morning of the 29th, I found that the fire was working east toward Higgins Gulch, and that the same had crossed the north line of the Reserve, and beyond my jurisdiction. Thereupon, I again went to Spearfish to notify you of the fact, and as to my authority to employ help under those circumstances. Not receiving your reply until late in the afternoon of the 30th, I started after supper to the fire. I could not say how far I got, as I had got into a dense brush country and completely lost, and again, was riding a strange horse which circled about in such a manner as to make my lost condition more complete, and about midnight returned to town. The next morning (31st) I reached the south line of the fire about 8 o'clock and worked the entire day and night. The fire was traveling very fast, but still doing no damage to the timber. The next morning (Sept. 1st) I worked along the south line to the west; fire burning very slowly, and in the heavy brush; went home, got something to eat, and returned to the fire, stayed there the entire night.

On the morning of the 2nd called you up on the telephone giving youthe condition of the fire on the south and west; met you at Leppla and McLaughlin Tie Camp that day and under your instructions employed 7 men with whom I started to the fire that night, was along the south line of the fire during the night and on the morning of the 3rd reached the southeast fire opposite Crow Peak. During the morning a heavy wind from the south came up, which completely took the fire from our control at one time hemming three men and myself in so that we barely escaped with our lives. It being utterly impossible for us to do any good, we returned to the Tie Camp, meeting you upon our return, and in accordance with your instructions that evening, I returned to the south and west lines of the fire. The country through which the fire was coursing was one mass of brush and but very little timber, and next to an impossibility to handle it, and in my judgment was a waste of money in attempting to fight it with help.

From that time on until the night of the 6th I was at the fire the most of the time, watching its course, at which time I employed two men, and together we whipped out a line of about 3 miles of fire on the southeast side, throwing the fire back into the gulch which was filled with brush, and from that time on did not burn out of there.

On the next day (7th) I turned my attention to the west line of the fire, which was then burning slowly but very hot, and employed three men to assist me. The fire was then burning to the northwest toward Beaver Creek. We whipped out the fire to the creek and had the west line completely out, when we noticed a bright fire burning south of us which was entirely out of the burnt district. The wind at that time was blowing strongly from the south and driving the fire directly toward us. We worked with it until morning, when we stopped from exhaustion. On that day (8th) in the afternoon, we again commenced work, and at midnight had the fire out on the west and north and was beyond a doubt under complete control and only burning in one place in a deep gulch which was covered with a dense growth of brush and doing no damage whatever.

From that time on, I watched the fire constantly until the afternoon of the 11th when I employed one man and the Kildonian Mining Company placed 16 men under my charge, and we again got the fire out, which had worked out onto the divide, where we could handle it.

The next day (12th) I was called from my bed and notified that the fire had again started. I employed three more men together with nine furnished by the Kildonian Company, and the next morning left the fire absolutely out. After breakfast with one man, I started back to patrol the fire line, when to my astonishment, we found at least a dozen fires burning in different places. They certainly must have been put there by someone, for we found that several of them had started some distance from the line of fire which had been put out. After working several hours the wind which was blowing strongly from the north made the fire hot together with the heat of the day, so that we could not accomplish any good.

Having decided again to work at the fire that night, I went to the Kildonian Camp to get help, but the indications being so good for a heavy rain, we decided to wait until the next day.

Sept. 14th: In your company on this day, we visited the scene of the fire, and after your looking the situation over, and deciding that it would be unwise to expend further money upon the fire, as you were well satisfied that at present there was no damage being done or danger, I did not return to the fire.

Early the next morning (15th) a good heavy rain set in which lasted 24 hours, completely destroying the fire.

Sept. 16th and 17th I patrolled the greater part of the fire lines, and was well satisfied that all danger was past.

The territory covered by this fire, I should estimate to be not more than 10 by 6 miles, and a most remarkable feature of the fire was that it did not injure the standing or growing timber, but cleaned up the brush and down timber which certainly is a benefit to the country and the timber.

In my inquiries as to the origin of the fire, I learned that it started about one mile from the mill of J. H. Geisler, whose Post office address is Spearfish, S. Dak., on the 23rd of August, and that the vicinity in which it was noticed was where he had been cutting logs, and was a complete mass of brush, tree tops, and timber refuse. At that time the fire could have been quenched without any trouble. I was also informed that one of Geisler's men started to put the fire out when he called him back and told him to let it burn.

Further information has reached me that one Fritz Bowman whose residence is in Higgins Gulch had been found by one Littlefield setting out fires, and had made the threat that he would burn the timber upon the Black Hills Reserve, or they would burn him.

As per your instructions I will make a thorough investigation of this fire and all matters relating to its origin and report the same to you as soon as possible.

Very respectully,

M. B. Ocuinbaugh
Forest Ranger.

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
P.O. Box 25007 (D-108)
Denver, Colorado 80225-0007

July 8, 2003

03/0492

John C. Twiss, Forest Supervisor
Black Hills National Forest
RR 2, Box 200
Custer, South Dakota 57730

Dear Mr. Twiss:

The Department of the Interior has reviewed Draft Environmental Impact Statement for the Elk Bugs and Fuels Project located in the northeastern portion of the Black Hills National Forest in Lawrence and Meade Counties, South Dakota, and provides the following comments.

Endangered Species

In accordance with section 7(c) of the Endangered Species Act, as amended, 16 U.S.C. 1531 et seq., the U.S. Fish and Wildlife Service (USFWS) agrees that all alternatives described in the Draft Environmental Impact Statement (DEIS) do not affect any federally listed threatened or endangered species or their habitats, with the potential exception of the bald eagle. The USFWS agrees with your assessment that the risk to bald eagles by the proposed project is low. No work should occur within 1/4 mile of any nest which may be found in the project area. The species' nesting season is January to August. Any nests found should be reported to this office. If changes are made in the project plans or operating criteria, or if additional information becomes available, the USFWS should be informed so that the above determinations can be reconsidered. 15-01

Water Quality

We are concerned about water quality related to both temporary and permanent stream crossings. The DEIS notes possible temporary siltation effects on streams from road construction and vehicular traffic. Vehicles traveling on the stream-bank and through the stream can increase sedimentation, erosion, and introduce contaminants (e.g., oil) into the stream. To ameliorate this problem, the we recommend that construction activities include best management practices such as sediment fencing and the addition of large cobble rocks, low-water concrete slabs, and open box culverts to limit or preclude additional sediment from entering the stream. The DEIS indicates that techniques to minimize siltation are suggestions to prevent streambed erosion and are not required as part of the plan. We recommend strongly that actions to reduce stream-bank and streambed erosion should be requirements rather than suggestions, especially for those streams that will be crossed frequently over an extensive period of time (more than two weeks). Even when large cobble rocks are used to protect the streambed, vehicular stream crossing should be minimized. Temporary roads should be restored to pre-construction conditions following project completion to avoid continued public use. 15-02

We also recommend performing all in-stream work before or after the fish spawning season to avoid egg suffocation. Survivorship of trout and sucker young-of-the-year is a good indicator of water quality. Brown trout and brook trout spawn in mid-to-late fall and rainbows spawn in mid- 15-03

March to mid-May (Personal communication, Jack Erickson; Personal Communication, Greg Gerlich]. Mountain suckers spawn in late spring to early summer [American Fisheries Society, Idaho Chapter Website, Accessed June 17, 2003]). Even after hatching, any increased sediment loads can impact fry under low flow conditions. Use of best management practices noted above should reduce the impact of increased siltation from construction activities. 15-03

If we can be of further assistance, please contact Carol Aron in the USFWS, Pierre Office at (605) 224-8693, extension 30.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

cc:
Carl Leland, U.S. Forest Service, US Post Office, Room 201, 18 South Mill Ave., Ridgway, PA 15853

References:

American Fisheries Society, Idaho Chapter Website. Accessed June 17, 2003. http://www.fisheries.org/idaho/mountain_sucker.htm.

Jack Erickson. 2003. South Dakota Department of Game, Fish and Parks. Personal Communication, June 17, 2003.

Gerlich, Greg. 2003. Colorado Division of Wildlife, Personal Communication, July 1, 2003.

Comment	Response
15-01	No response necessary.
15-02	The EIS requires, rather than suggests, that BMPs be incorporated into the proposed project. Mandatory BMPs applicable to roads and stream crossings are listed in Appendix B: Mitigation Measures, under the following sections: Roads, Streamside Management Zones, Connected Disturbed Areas, Water, Fisheries, and Riparian Areas, Water Influence Zones, and Wetlands. Discussion of the application of BMPs occurs in the Physical Environment – Hydrology and Soils – Environmental Consequences – Direct and Indirect Effects – Mass Movement, Water Quality, and Floodplain and Fisheries sections of Chapter 3. The number of stream crossings used by vehicles is limited under BMPs and is incorporated into Appendix B. BMPs are required regardless of how long the road is used. Forest policy is to close temporary roads in such a manner that continued use by the public is not possible.
15-03	The project proposal includes a design criterion restricting the months in which ground disturbing instream work may take place.

Dear Ms. Krueger:

The hardcopy of the attached letter will arrive by mail.
Please contact Brad Crowder, EPA Lead Reviewer for this project with any
questions (303)312-6396.

Sincerely,
Phil Strobel

Philip Strobel
EPA Region 8 - NEPA Program
303.312.6704

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July 14, 2003

Ref: EPR-N

John C. Twiss, Forest Supervisor
RR 2, Box 200
Custer, SD 57730

Elizabeth Krueger,
National Environmental Policy Act Coordinator
Northern Hills Ranger District
2014 Main Street
Spearfish, SD 57783

Re: "Elk Bugs and Fuels" Draft Environmental Impact Statement; Black Hills National Forest, Northern Hills Ranger District; Lawrence and Meade Counties, South Dakota; May, 2003; CEQ #030244

Dear Mr. Twiss and Ms. Krueger:

The U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the "Elk Bugs and Fuel Project" Draft Environmental Impact Statement (DEIS) in accordance with our responsibilities, under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, to evaluate the overall impacts to human and natural environments.

EPA notes that the proposed harvest and treatment acreage associated with this project, and cumulatively with the proposed Prairie Project, are significant in their geographic extent, and that the Forest Service attempted to balance statutory requirements, public input, and

stakeholder interests in both projects. Based on our earlier comments and discussions and understandings with the Forest Service, we offer a number of comments and questions to provide further clarification in the Final EIS.

Soil Erosion and Water Quality

The modeled erosion rates reported in the DEIS indicate that the likely erosion and sedimentation rates are substantially less for Alternative 2, among alternatives that partially meet the Purpose and Need. Expected sediment losses for Alternative 2 are less than half of those for the Proposed Action, Alternative 4. As reported in the DEIS (Table 27), the expected total average annual losses of sediment to streams for each alternative are

	Minimum	Maximum
Alternative 1	2,655 tons	10,136 tons
Alternative 2	541 tons	1,205 tons
Alternative 3	1,239 tons	3,238 tons
Alternative 4	1,314 tons	2,701 tons

These and other soil and water quality impacts listed in the DEIS (pages
60 - 80) indicate that Alternative 2 is more protective of the aquatic environment than the Proposed Action.

Mountain Pine Bark (MPB) Beetle Infestation

Given current science about beetle ecology, management technology,
and available funding, control and suppression activities appear most likely to be successful where protection is targeted on the most highly valued management areas, such as wildland-urban interface zones, campgrounds and other structures. Because management actions will not stop a beetle epidemic, we recommend concentrating control and suppression actions on areas where individual tree loss would be detrimental to the values associated with an area.

16-01

EPA recommends that larger trees be retained to the extent possible to retain the most fire resistant trees thereby promoting long-term soil retention, as well as other ecological benefits. Proposed treatments in each alternative focus on objectives to (1) reduce hazardous fuel concentrations and (2) reduce stand susceptibility to beetle infestation. These two objectives may conflict where the proposed treatments, particularly for commercial harvest, will remove larger trees that are both more susceptible to MPB beetle attack and are the most fire resistant trees.

16-02

Comment	Response
16-01	Under all action alternatives, most actions are proposed in the vicinity of private lands (Chapter 1, Issues, Issue F, and Table 6, Response of Alternatives to the Issues). Table 6 displays acres of treatment within a half-mile of private land.
16-02	Proposed thinning treatments would thin from below, removing the smaller trees in the stand. See Chapter 2, Alternatives Considered in Detail – Vegetative Treatments – Commercial Thinning and Non-commercial Thinning.

The FEIS should discuss the natural role that beetles play in forest health and succession and how the need for future treatments varies among alternatives. EPA has a bibliography, http://www.epa.gov/region08/compliance/nepa/nepadocs/beetlebib.html, that addresses many forest management issues, including MPB beetle management. The citations provided below refer to references in that bibliography. Much of the public perceives epidemic beetle populations as part of an unhealthy forest environment. EPA understands the importance of protecting designated values in the analysis area and adjacent, private land interface zones. However, beetles, fires, and other natural disturbances can foster a healthy, diverse forest. Forests have proven resilient, if not dependent, on the boom and bust cycles of MPB beetle (Alexander 1974; Baker and Veblen 1990; McCambridge and Knight 1972; USDA Forest Service 2000; Zhang et al., 1999). Beetle infestations serve as disturbance and regeneration agents similar to the role of fire and, to some degree, of mechanical thinning or harvest that can be designed to mimic or replace those natural functions. After beetle outbreaks, forests are often thinner and more diverse and, therefore, more capable of sustaining regenerative ground fires or smaller, stand-replacing fires that ponderosa ecosystems depend on for their evolution (Schmid and Mata 1992; USDA Forest Service 2000).

16-03

Considering that beetle infestations are cyclic in nature, are multiple future treatments anticipated for the analysis area, and will funding be available for sustaining those treatments? Aggressive forest fire suppression, especially when combined with the effects of extensive livestock grazing, can result in a thicker, less diverse forest that is more prone to catastrophic, stand-replacing fire events and large-scale beetle infestations. The Proposed Action will require the Forest Service to intervene on an ongoing basis, to maintain conditions that minimize the risks of insect and disease epidemics. Thinning will result in more uniform spacing, species and age class and lead to greater need for active management of fuels in the future, such as repeated thinning that suppresses natural succession. If a project goal is to create conditions which will make insect and disease epidemics less likely to develop in the future, some studies suggest that beyond the first few years of extensive tree mortality from beetles and fine fuel input from standing dead trees, the risk of catastrophic wildfire decreases again to background levels (e.g., Schmid and Mata 1996).

16-04

Fire/Fuels Management

It would be helpful if the Forest Service quantifies in the FEIS how much land adjacent to or near private property will be treated under each alternative, to evaluate their effectiveness. Quantified measures would support the DEIS's objectives for Issue F ("Propose more treatments near private property," consistent with the P.L. 107-206 requirement to thin stands within 200 feet of private property) and the DEIS indicator measure for "acres of treatments within ½ mile of private property" (page 11). We did not note where that effectiveness to treat lands near private property and wildland-urban interface zones

16-05

was evaluated. EPA concurs that management actions to reduce the risk of catastrophic wildfire are most likely to be successful where protection is focused on wildland-urban interface zones and near structures. Allowing for more natural forest succession in other areas that do not have urban use values would better support wildlife habitat and other goals, such as old-forest structure and water quality.

16-05

Comment	Response
16-03	The natural role beetles play in forest health and succession is discussed in Chapter 3, Biological Environment – Forest Vegetation – Existing Silvicultural Conditions – Insects and Disease; and Environmental Consequences – Stand Structure and Stocking, Stand Diversity.
16-04	Chapter 3 discusses the temporary reduction of risk in the Biological Environment – Forest Vegetation – Environmental Consequences – Direct and Indirect Effects – Forest Insects section. Future entries are probable, barring unforeseen circumstances.
16-05	Most proposed activities would take place near private lands. See Chapter 1, Issues, Issue F, and Table 6, Response of Alternatives to the Issues. Table 6 displays the acres of treatment within ½ mile of private land. Information has been added to the FEIS to display the number of acres that would be treated within ½ mile of private property. See Chapter 3, Physical Environment – Fire Hazard and Fuel Loading.

The goal to discourage natural forest succession (Chapter 1, page 9), by harvesting ponderosa pine to enhance hardwood stands, appears to run counter to objectives for both mature ponderosa pine forest and associated meadow habitats. By discouraging natural succession, those actions may increase the intermediate- to long-term risk of wildfire in back country areas that are not near or adjacent to the wildland-urban interface zone. All action alternatives seek to create more grass-forb habitat for elk and deer. However, the DEIS discusses the limitations of older-growth forest habitats to support sensitive species in the project area and the cumulative impacts area (pages 160-186). For example, it is stated that there is "... a lack of large trees as well as late and old forest structure (currently 47 acres of structural stage 5) across the landscape" (page 182). In addition, grass-forb-shrub meadow habitat, which currently limits elk and deer populations, is consistent with mature, late-succession/old-growth structure in ponderosa pine ecosystems. The FEIS should identify whether increases in forage and livestock access from the Proposed Action (pages 211-214) may negate gains in elk and deer habitat and harm sensitive wildlife species. In addition, livestock grazing has been shown to be a significant factor in enhancing the risks of wildfire.

16-06

Given the evolving understandings about fire management and the conflicting anecdotal information and science on fire behavior, EPA urges the Forest Service to consider setting priorities for treatments where the effectiveness for fire prevention is maximized and adverse environmental impacts may be minimized. One such approach would be to:

- First treat areas near and adjacent to private property and recreation facilities for fire and MPB beetle infestation by using mechanical thinning, prescribed fire, bait and sanitation cutting, and fuel breaks.

- For areas that are managed for commercial timber production, emphasize harvest first in those areas thathave system roads and minimize the impacts to important wildlife habitats and aquatic ecosystems.

- In other areas, consider allowing ponderosa pine systems to move towards late succession forest over some portion of the project area by limited management practices (for example, using prescribed fire) or, where possible, by eliminating active management. The goal for such practices would be (1) to enhance wildlife habitat and other ecological values in areas that are most important to sensitive and important wildlife, and (2) to study fire risk and behavior in naturally succeeding areas.

16-07

Roads

The Proposed Action's expansion of total road mileage could conflict with project objectives to reduce fire risks. Where roads are constructed and improved, the Proposed Action may increase the use of motorized and non-motorized recreation. Particularly where more roads are constructed near existing residential and other private lands, the risks of wildfire ignition, noxious weeds, and other adverse impacts will increase both in those areas and in more easily accessed back country areas. 16-08

In the DEIS, the action alternatives propose to decommission 55.9 to 62.0 miles of roads, an action supported by EPA as among the best means of restoring aquatic habitat impacted by sediment. The DEIS also indicates "(N)on-system roads not needed for management or other uses will be obliterated or decommissioned as the opportunity arises." It would be helpful to understand the impacts from these routes on recreation access and activities, wildlife habitat, erosion and sedimentation, and other resources and activities. The FEIS should indicate whether decommissioned roads will be obliterated by being ripped, re-contoured, re-seeded, gated and monitored, or a combination of these techniques. Some detrimental effects of roads include habitat fragmentation, water channelization, sediment transport and increased human use and concentration. 16-09

Environmentally Preferred Alternative

EPA noted that the DEIS indicates very little or no difference in the effectiveness of fire protection measures reported for Alternatives 2 and 4, for reduction of fuel hazard ratings (Table 46), fuels and fire behavior indicators (Table 47), post-treatment fire type (Table 48), fire regime condition class (Table 49), and fire regime class (Table54). Alternative 4 is reported to include additional thinning and other activities adjacent to private property, including an additional 323 acres of thinning and over 550 more prescribed burning (Table 101 vs.
Table 99).

The risks of MPB beetle infestation and damage are understandably difficult to predict and quantify. However, Alternative 4 has much lower cost effectiveness than Alternative 2 (net economic benefits of ? $1.5 million compared to ? $726,000 for Alternative 2, Table 102). Alternative 2 also results in significantly less adverse impacts to wildlife habitat, soil and water resources, and other environmental resources.

Comment	Response
16-06	Early succession hardwood stands require periodic disturbance, such as wildfire, to persist through time. Fire suppression allows conifers to encroach on and eventually displace hardwoods on the landscape. Treatments that remove conifers from hardwood stands generally discourage succession. Due to the importance of hardwood stands to many plant and animal species, the Revised Forest Plan emphasizes restoring or maintaining hardwoods throughout the Forest. As stated in the DEIS, hardwood stands in the Black Hills are considered less flammable than conifer stands and are unlikely to support crown fire activity (Chapter 3, Physical Environment – Fire Hazard and Fuel Loading). In addition, hardwoods made up a larger portion of the landscape historically (Black Hills Land and Resource Management Plan 1996)
16-07	Proposed treatments focus on areas surrounding private property (Chapter 1, Purpose and Need items 2 and 4; Chapter 1, Issues, Issue F; and Table 6, Issue F). An alternative with no new road construction was considered; see Chapter 2, Alternatives Considered But Eliminated from Detailed Study. Impacts on late successional forest habitat are disclosed in Tables 77, 78, 79, and 80. Most dense, late successional forest habitat would remain untreated under all alternatives.
16-08	Analysis of fire records (1970-1996) shows that 67% of all ignitions were caused by lightning. Recreational use accounted for less than 10 % of all fire starts on the Forest. Any increase in fire occurrence due to road development would likely be offset by the shorter response time and increased use of firefighting equipment afforded by access from developed roads (Revised Forest Plan).
16-09	Methods used to decommission roads would vary according to site-specific conditions. In each individual situation, the Forest Service would generally use the method that would cause the least ground disturbance while effectively closing the road. Methods may include but are not limited to ripping, seeding, water-barring, slashing, removal, and blocking.

Because of the significant adverse impacts from the Proposed Action, EPA recommends that the Forest Service develop a modified version of Alternative 2 for the Environmentally Preferred Alternative, and give consideration to selecting that alternative as the Proposed Action. Suggested modifications to reduce adverse environmental impactsand improve project effectiveness include:

16-10

1. Minimize the miles of new road construction for commercial timber harvest along existing system roads.

2. Obliterate existing system and non-system roads that are no longer needed.

3. Minimize cutting and thinning in back-country areas, to protect wildlife habitat to the extent practicable and achieve old forest structure goals.

EPA'S DEIS Rating

EPA evaluates the potential effects of proposed actions and the adequacy of the information in a DEIS. The Proposed Action (Alternative 4) and Alternatives 2 and 3 are rated "EC-2" (environmental concerns, insufficient information) under EPA's ratings criteria (enclosed). The "EC" rating means that the Alternative does not require substantial changes, but EPA has identified environmental impacts that should be avoided to fully protect the environment. The rating is based on EPA's concerns regarding the potential adverse impacts to water quality, soil erosion, and wildlife habitats. The potential for significant environmental degradation can be reduced by modifying the Proposed Action to (1) maintain or enhance selective actions in the wildland-urban interface zone, (2) reduce the overall impacts from timber harvesting, and (3) encourage natural succession to mature ponderosa pine forest structure in back country and important wildlife habitats. The "2" rating means that the DEIS lacked sufficient information to thoroughly assess an alternative with the potential to achieve objectives to minimize fire risk and epidemic insect infestation while minimizing or fully mitigating the adverse environmental impacts to soil, water, wildlife, and other resources.

Thank you for your willingness to consider our comments as you prepare the Final EIS. If you have any questions or would like to discuss our comments, please contact Brad Crowder of my staff at (303) 312-6396 or by email at crowder.brad@epa.gov.

Sincerely,
Original signed by Phil
Strobel for

Cynthia Cody
Director, NEPA Program
Office of Ecosystems

Protection and Remediation

Enclosure

Comment	Response
16-10	An alternative with no new road construction was considered; see Chapter 2, Alternatives Considered But Eliminated from Detailed Study. Obliteration of unneed roads is proposed under Alternatives 2, 3, and 4 (Chapter 1, Purpose of and Need for Action, item 8; Chapter 1, Issues, Issue B; Chapter 2, Transportation Activities – Decommissioning; Tables 2, 3, 4, 5, and 6). Proposed treatments focus on areas surrounding private property (Chapter 1, Purpose and Need items 2 and 4; Chapter 1, Issues, Issue F; and Table 6, Issue F).

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Comments on Elks Bugs and Fuel DEIS,

IMPACTS TO ROS

There are four areas assigned to Semi Primitive Non Motorized ROS class that rest within the territory in the Elks Bugs and Fuels DEIS. These areas include two Backcountry non-motorized Recreation Management Areas (MA): Crook Mountain at 1,644 acres and Beaver Park at 4,274 acres and also include two watersheds Management Areas; Fort Meade and Sturgis Experimental at 3,299 acre and 1,070 acres size respectively. These add up to 10,287 acres or .57% of the semi-primitive non motorized areas on the Forest. There are approximately 18,000 acres of in Semi Primitive Non Motorized ROS classed areas in the entire Forest,.

A setting inconsistency is defined in the "ROS Users Guide" at page 29 : "When the physical, social and/or managerial setting are not the same on the same piece of ground a 'setting inconsistency" is occurring." The Black Hills National Forest has chosen to assign ROS classes to Forest Management areas in such a way that setting inconsistency are the norm.

Please disclose all the setting inconsistencies that existed in 1997 when the Plan Revision was approved, within these 4 Semi-Primitive Non-Motorized ROS classed areas. Given the serious setting inconsistencies within the Crook Mtn Backcountry Non Motorized Recreation Emphasis, Sturgis Experimental Watershed and Fort Meade VA Hospital Watershed areas, where the ROS decisions just driven by management criteria, not physical criteria? Please explain if any physical values existed in these areas that caused you to believe they warranted Semi-Primitive Non-Motorized ROS class? They are near Beaver Park. Do they have special trail system values? Are they especially scenic or distinctive as a hiking destination for some reason? What is the cover type and structural stages? Are they valuable or unique to hikers?

17-01

Forest wide status quo

We incorporate by reference the Recreation and Wilderness sections of the Biodiversity Associates et al. Forest Plan Revision Appeal 1997.

According to the Record of Decision on the 1997 Plan about 11,000 acres on the Forest or .9% of the forest was assigned to a Primitive Recreation Opportunity Spectrum (P ROS) class and 18,000 or 1,44% assigned to a Semi Primitive Non Motorized class (SPNM ROS). (BHNFLRMPlan Revision Record Of Decision, Appendix page 8) Since then some acreage (?3,600 acres?) has been added to Black Elk Wilderness which should increase the percent of the Forest in P ROS class to about 1.2%.

In the entire Forest 12,000 acres are in Semi Primitive Motorized (SPM) ROS class, 1,107,000 are in Roaded Natural (RN) ROS class, 95,000 are in Roaded Natural Non Motorized (RNNM) ROS class and 1,000 are in Rural (R). 89% of the

Forest is in RN and 8% is in RNNM 1% is in SPM. (ROD Appendix page 8)

Forest wide there are 11,033 acres in Management area 3.32 (Backcountry Recreation Non Motorized) and this project/past recent logging will impact 53% of that management area type. Forest wide Semi-Primitive Non-Motorized ROS classed areas are comprised of:

1. six 3.32 Management Area areas,
2. two watershed management areas
3. and six out of eight Botanical areas .

Of the 18,000 acres of the forest assigned to Semi-Primitive Non-Motorized ROS class, setting inconsistencies abound. To understand this please refer to the "ROS Users Guide" Mapping Criteria tables for :

Remoteness Criteria ,at Table 3, on page 18,
Size Criteria, at Table 4, on page 20,
Evidence of Humans Criteria,at, Table 5, on page 22,
Social Setting Criteria, at Table 6, on page 26
and Managerial Setting Criteria, at Table 7, on page 27.

Below find the text that describes SPM , Semi-Primitive Non-Motorized and Primitive ROS class remoteness, size and evidence of human criteria from ROS Users Guide Criteria tables (see pages listed above for the tables)

17-01

P ROS class

Remoteness Criteria: "An area designated at least 3 miles from all roads, railroads or trails with motorized use"
Size Criteria: "5,000 acres"
Evidence of Humans Criteria: "Setting is essentially an unmodified natural environment. Evidence of Humans would be unnoticed by an observer wandering through the area" Evidence of trails is acceptable and should not exceed standard to carry expected use,"" Structures are extremely rare."
Social Setting Criteria: Usually less than 6 parties per day encountered on trails and less than 3 parties visible at campsite.
Managerial Setting Criteria: "On-site regimentation is low with controls primarily off-site"

Semi-Primitive Non-Motorized ROS class of

Remoteness Criteria: "An area designated at least 1/2 mile but not further than 3 miles from all roads, railroads or trails with motorized use: can include the existence of primitive roads and trails if usually closed to motorized use,"
Size Criteria: "2,500 acres" * "(may be smaller if contiguous to Primitive Class)"
Evidence of Humans Criteria: "Natural setting may have subtle modifications that would be noticed by not draw the attention of an observer wandering through the area."" Little or no evidence of primitive roads and motorized use of trails and primitive roads."Structures are rear and isolated."
Social Setting Criteria: "Usually 6 - 15 parties per day encountered on trails and 6 or less visible at campsites."
Managerial Setting Criteria: "On-site regimentation and controls* present but subtle" * "Controls can be physical (such as barriers) or regulatory (such as permits)"

SPM ROS Class

Remoteness Criteria: "An area designated within 1/2 mile of primitive roads or trails used by motor vehicles, but not closer than 1/2 mile from better than primitive roads."
Size Criteria: "2,500 acres ** (may be smaller if contiguous to Semi Primitive Non Motorized Class)"
Evidence of Humans Criteria: "Natural setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails and primitive roads within the area." Strong evidence of primitive roads and the motorized use of trails and primitive roads" " Structures are rare and isolated
Social Setting Criteria: Low to moderate contact frequency.
"*Managerial Setting Criteria:*"On-site regimentation and controls* present but subtle" *" Controls can be physical (such as barriers) or regulatory (such as permits)"

Setting Inconsistencies

Valued too high:

Most of the areas in the Black Hills designated as Semi-Primitive Non-Motorized are not both 2,500 acres in size and 1/2 mile from trail with motorized use. Some of them may be 2,500 acres in size, but they have open roads within that 2,500 acres. For example Fort Meade VA Hospital Watershed has a three way road intersection of light duty improved graveled roads (Forest Roads 171 & 170) and is basically bisected by Forest Road 171. Only a few of the SPNM areas are 2,500 acres size without motorized use. Some of them have developments within them such as the radio tower in the Sturgis Experimental Watershed, which also has a forest system road 139 in it and which is also too small, although part of it is within the Beaver Park Roadless Area.

Many areas designated as SPNM due to Back Country recreation, do not meet the criteria: Cook Lake, Crow Peak and Little Spearfish Creek, are too small and near roads. Crook Mountain is also too small.

4 of the 6 special botanical areas that are designated SPNM, are small areas adjacent to or near roads and do not meet the remoteness criteria, the size criteria, or the evidence of humans criteria. Engle wood Springs is tiny and next to a improved gravel road, Dugout Gulch is too small and divided in part by an improved & graveled trail/road. North Fork Castle Creek is too small, and has an improved gravel road near one side. Macintosh Fen is tiny and bisected by a improved gravel road. The Bear and Beaver Gulch Botanical areas have primitive roads in sections and sections are near improved gravel roads. Their net area may be 2,500 acres, but it is not 2,500 acres that are a 1/2 mile from roads with motorized use. The Sand Creek Botanical Area,, does not meet the size requirement: The Forest Service gave SPNM protection to only a small subset of the roadless area, the rest is roaded natural or roaded natural non-motorized.. .

The watershed areas (5.2A and 5.3B) ,which are within the area of this Elks Bugs and Fuel DEIS, are designated as SPNM and are both bisected by either graveled or unimproved roads roads, will both have timber sales, and one includes a radio tower. Would they qualify for SPM? As mapped they are both too small to meet the SPNM designation. (Parts of Fort Mead Watershed is designated as SPNM, but is fragmented by the road corridors which are designated as RN see FP guideline 5.2A-5101). Sturgis Experimental Watershed is designated a SPNM ROS class while being managed for timber sales, and was assigned a Scenic Integrity Objective of "low", which is not only inconsistent with the ROS evidence of humans criteria, but also violates specific direction in the FSM's ROS section: 2311.11. Vegetative management is allowed in both areas which will violate the evidence of humans criteria. Conversely the east edge of the Sturgis Watershed area is within the Beaver Park Roadless Area.

Of all the areas designated Forest wide as SPNM only 2 backcountry recreation areas used to meet the basic SPNM criteria. Beaver Park used to meet the ROS class requirements. The Sundance Burn back country recreation area may meet the size and remoteness criteria, but past timber sale activity in subsets of the area may have effected the evidence of humans criteria.

In the Black Hills Forest Plan due to the Forests travel management decisions, no area meets the Primitive ROS class remoteness criteria. Inyan Kara isn't quality primitive ROS as it doesn't meet the size and remoteness criteria. Black Elk, Pilger, Sand Creek and Beaver Park don't qualify as primitive due to remoteness. Black Elk may not meet the social criteria due to overuse by too many hikers. But Black Elk and Inyan Kara are given primitive ROS in the Revised Plan.

Currently there are 3 inventoried Roadless Areas: Beaver Park, Sand Creek and Inyan Kara and also Wilderness at Black Elk. We discount Inyan Kara as a recreation resource, as it is land locked by private land and access to it is extremely limited. It may meet some of the Semi-Primitive Non-Motorized criteria, but how can it function as a recreational resource if people can't get to it?

Valued too low:

Conversely fine areas that would actually meet the semi primitive criteria were given less protective ROS classes. Most of the Sand Creek Inventoried Roadless Area, which would meet most of the criteria for P designation, is instead designated RNNM.. The Pilger Mountain, which is nominated for wilderness by conservationists, is Roaded Natural ROS class. In most of the former -4 - C management areas in the Southern edge of the Forest (in the 83 Plan these areas were designated

17-01

as wildlife habitat in areas of low resource productivity), little timber activities and associated road construction has occurred due to the lands not being suitable for timber. Many 4-C areas could provide 2,500 acres of SPNM ROS. Elk mountain, which with travel restrictions would meet SPNM, is managed as SPM. Most of the former 4-C areas are assigned roaded natural ROS. Black Fox/swede Gulch which was a large area that was SPNM under the last plan is now RNNM. Norbeck, parts of which is also part of the conservationists wilderness proposal is RNNM. Crow Peak, another area proposed as a wilderness study area by conservationists, is split into SPNM and RNNM. 17-01

Recent & proposed Forest wide changes

The Forest Service is logging and roading around Black Elk in the Norbeck Wildlife Preserve. Originally during Forest Planning the Norbeck was assigned a Semi-Primitive Non-Motorized ROS class designation, but the ROD amended that ROS class down to RNNM as the Forest Service wanted to be able to log Norbeck. The Norbeck is assigned a Roaded Natural - Non Motorized ROS class and after this August will be logged. This will drop it down from Semi-Primitive Non-Motorized to RNNM ROS class in reality, not just on paper. The Forest Service recently logged in and around Beaver Park dropping down its ROS quality, in reality if not on paper. These two logging/roading events were approved by the legislation.

Via the upcoming Cement and Welcome Sand timber sales the Forest Service will be logging around the inventoried Sand Creek Roadless Area and within the boundaries of the 1991 Wilderness proposal as proposed by conservation community. In other words people disagree over where the Sand Creek roadless area boundaries are and the Forest Service proposes to log in the disputed zones.

Will the Sun Dance Burn area (Backcountry Recreation area) be logged and roaded do to fear of beetles near Warren Peak? 17-02

If the Forest Service is actually to create real Primitive or Semi-Primitive Non-Motorized ROS it needs to meet the remoteness criteria for these classes. The only places where that lack of remoteness for P ROS class on the Forest can be fixed: would have been next to Beaver Park, Sand Creek or Black Elk. But as these areas all get logged and roaded we lose that option. Another possible place for a Semi-Primitive Non-Motorized/Primitive ROS class zone might be Pilger Mountain area, although the Forest Service doesn't currently recognize or plan to manage and protect Pilger as an inventoried roadless area. 17-03

Recent and Proposed changes to Elks area

The Veteran Boulder Timber sale approved, as I remember it roads and logging in the Sturgis Experimental Watershed. It approved logging/roading in the Fort Meade Watershed. The 2002 legislation allowed logging greater than a square mile in the core of the Beaver Park Roadless area. I believe it allowed logging/roading in Sturgis Experimental WAtershed area. I don't think it approved logging in the Fort Meade Watershed. This DEIS proposes new road construction, reconstruction and timber harvest in the Crook Mountain Backcountry recreation area. This DEIS proposed new road construction, reconstruction and timber harvest in the Fort Meade Watershed area. I am not sure but I don't think it proposes new harvest roads in the Sturgis or Beaver Park area.

The Forest SErvice needs to look at the cumulative impacts of all the beetle prevention logging roading in this "Elks" area on Semi-Primitive Non-Motorized ROS quality. What are the cumulative effects to these area's setting inconsistencies. Only Beaver Park actually met all the criteria for that ROS class in 1997. How much worse have the setting inconsistencies become via Veteran Boulder and the 2002 legislation and how much worse will Elks Bugs and Fuels make the setting inconsistencies. You admit on page 31 in the section on ROS that "Activities such as road building and skid trails may convert this ROS class to SPM..... The proximity of new roads to the SPM areas may convert the to roaded natural ROS."

What is the point at which the setting inconsistencies just become too extensive and you need to use this DEIS to lower these areas SPNM ROS class to Roaded natural-non motorized or to Semi-primitive motorized? 17-04

If the ROS class exists on paper but not in reality than you are giving the recreational users, bureaucratic myth, not a real place to hike. If you lose 1/2 of the Semi-Primitive Non-Motorized ROS classed areas on the forest, (which Class was such a tiny percent to begin with), you need to use PHASE 2 amendments to replace them with Semi-Primitive Non-Motorized

Comment	Response
17-01	The Revised Forest Plan determines recreation opportunity spectrum (ROS) classes used to manage recreation settings. All action alternatives would meet Revised Forest Plan goals, objectives and ROS guidelines. Reevaluation of the elements of the ROS system is outside the scope of this project. Refer to the annual Forest Monitoring Report for information on ROS updates.
17-02	Activities on the Bearlodge Ranger District are outside the scope of this analysis.
17-03	See response to Comment 17-01.
17-04	To maintain the semi-primitive non-motorized setting, proposals have been modified to include decommissioning of any new roads constructed in MA 3.32 after harvest is completed. The Forest monitors ROS annually and updates classifications if necessary. The most recent available monitoring report (2001) concluded that no changes had occurred to the ROS as mapped in the Revised Forest Plan. If an action alternative is selected, the area would be examined for any necessary ROS updates after the project is completed.

designations elsewhere. Given the intensive timber program which logs 1/4 of the Forest about every decade, if you don't act now to protect some areas with high ROS classes, you will foreclose future options. 17-04

Cumulative Impacts Forest Wide

As we requested above, please disclose why the Fort Meade and Sturgis watersheds were given Semi-Primitive Non-Motorized ROS to begin with. Given that only 2.6 percent of the Forest is in Semi-Primitive Non-Motorized and Primitive ROS class combined & given that Inyan Kara is inaccessible and that you are logging and roading about 1/2 the Semi-Primitive Non-Motorized areas on the Forest via "Elks" ; given that most the Semi-Primitive Non-Motorized areas on the forest are smaller than 2,500 acres and abound with setting inconsistencies, do you really have any credible Semi-Primitive Non-Motorized program on this Forest? Isn't this a timely issue for a Forest Plan Amendment?. 17-05

Will logging and roading in "Cement Project" timber sales and Welcome/ Sand Project timber sales proceed concurrent with "Elks Bugs and Fuel"? Will areas that would make quality SPNM ROS class areas be logged/roaded before the Forest Service addresses the cumulative impacts to Semi-Primitive Non-Motorized recreation in the north east and north west corner s of the forest and before Phase 2 amendments?

Unfortunately 1/2 of the Semi-Primitive Non-Motorized areas are put in the suburban/interface near Piedmont/Sturgis. It is now popular to do continuous intensive management in that urban/suburban interface to protect homes and people from fire. Is it still appropriate to have a zone of Semi-Primitive Non-Motorized ROS class areas right next to towns? If you open the pine overstory so the crowns don't touch, you will have understory pine regeneration. If you wish to continue to manage under this anti-fire protocol, won't you have to go in again in 15 or 10 years to treat that regrowth so to manage risk from ground fires & ladder effect? Once you open the crowns, you start a continuous future logging program. Won't you have to go in and thin again? How can you have Semi-Primitive Non-Motorized areas that are logged and roaded every 10-15 years? This is intensive management that is not appropriate in Semi-Primitive Non-Motorized class.

We believe that the Forest Service and the fear of bugs/fire is going to create extensive, perpetual not curable setting inconsistencies within areas with high end ROS designations in NE corner of the Forest. The Forest needs to be pro-active and use the Phase 2 amendments to re-designate actual REMOTE areas, areas away from the urban/suburban interface as Semi-Primitive Non-Motorized ROS class. Such an area is the NW corner of the Forest where Sand Creek rests, which in addition to being relatively remote, has lots of aspen/birch areas which are more resistant to fire than pine. In a Forest concerned with insects, fires and fuel loads and urban/suburban interface, it make more sense to make remote, moist aspen/birch stands into SPNM and Primitive ROS class. Maybe hikers can depend on the Forest not to log and road these areas? 17-06

The Forest needs to wait on logging in low road density remote areas around Cement and Welcome/Sand Projects, until an overall study of the cumulative impacts of bugs/fire timber treatment program on Primitive and Semi-primitive ROS class recreation can occur. If you don't wait and log the Cement/Welcome/Sand areas first you foreclose your future options to have a credible SPNM ROS program near inventoried roadless areas on the Forest. SPNM ROS opportunities will be lost around Beaver Park, around Black Elk and around Sand Creek. It is all happening right now.

Maps in Elks Bugs and Fuels

Map symbols are confusing as legend shows various timber treatment patterns at a different scale in legend than on the maps. Some patterns appear to be drawn differently by the computer. Some values are very light, like the pattern for new road construction and these patterns of light values become lost under the darker vegetative treatment patterns.

The maps are confusing because they are not aligned in a horizontal pattern. It is next to impossible to find where you are on maps. A larger map of management areas, showing how each map relates to management areas is needed, The map of management areas on page 1-7 when compared with the map index on cover of map appendix are inadequate for understanding how treatment maps relate to management areas. I can't figure out where the management areas boundaries are on the various maps. 17-07
The same confusion exists for the tiny watershed map.

While it is good to have the map atlas provided, too much information is displayed on the same map.
For example I think the timber treatments sometimes obliterate the road information by being printed over the grey road

Comment	Response
17-05	See response to Comment 17-01.
17-06	See response to Comment 17-01.
17-07	The Forest Service has made every effort to clarify maps contained in the EIS. There are limitations on the amount of information that can be displayed on maps of this scale. Larger, more detailed maps are available on request.

info.

These additional maps are needed:

1. Maps displaying topographical information are needed
2. A separate map should be used to display road and travel management information. Map(s) should differentiate between unclassified, primitive system roads and better quality system roads. Areas with road closures should be identified.
3. A map showing management areas in relation to map index is needed so we can tell which map overlays which management area.
4. A larger map of watersheds is needed
5. A map of existing and proposed structural stages is needed
6. A map of existing and proposed cover type is needed.
7. A map showing distance from residences is needed -- ie a map should show 1/2 mile circle around a house/building/structure.
8. A map showing ROS classes is needed
9. A map showing Scenic Integrity Objectives is needed.

17-07

Cumulative Impacts

You should add the Veteran Boulder sale to the cumulative impacts section.

17-08

Zones around wilderness/roadless areas:

The projects in Welcome/Sand and Cement Projects in Bearlodge District also log around an inventoried roadless area. One of the issues in the DEIS should be recent forest wide impacts to current and potential Semi Primitive Non Motorized Recreation resource, especially in the vicinity of inventoried roadless areas and wilderness. The Sand Creek vicinity proposed logging/roading actions, should be added to cumulative effects discussion and are also similar actions, given timing and impacts to Semi-Primitive Non-Motorized recreation opportunity.. As Norbeck is losing remote/wild areas to logging/roading but gaining wilderness area for Black Elk, that should also be added to the cumulative effects discussion, for effects on primitive and semi-primitive ROS class.

17-09

Management areas

The discussion on Chapter 1 page 5-6 about management areas is confusing. We assume that the areas listed on page 5 are in the new project area ("Elks') and the areas listed on page 6 are in the legislative area (P.L. 107-206) and that some areas are in both. It could however be stated more clearly, identifying which areas are in both zones (new proposal and old legislation).

17-10

Visual Quality

We incorporate by reference the Visual Quality section of the Biodiversity Associates et al. Black Hills National Forest Land and Resource Management Plan Revision Appeal 1997. The Visual Quality analysis in the Forest Plan was arbitrary and capricious and the Forest Service should always ground truth SIOs during project planning. The scenic attractiveness values were assigned using computer data not really related to visuals and didn't have ground truthing. The concern levels were improperly done, failing to give proper importance to areas used only by locals at low or moderate levels, but where locals had a high concern for visuals.

17-11

Please do not rely on the SIO's set at the plan level. re-evaluate all scenic attractiveness, concern level decisions and SIO values on your planning area.

Aspen & openings

Aspen is more fire resistant than pine. If you thin pine or open up the pine overstory so crowns don't touch, in 10 or 15 years you will have to weed the pine regrowth due to threats of ground fire and ladder effects. When you open the overstory you will make stands hotter and more windy - you desiccate the stands. Aspen will be stable for at least 60 years, it pro-

17-12

Comment	Response
17-08	There is no Veteran Boulder Timber Sale on the Northern Hills Ranger District. Timber sales implementing the actions authorized by the Record of Decision for the Veteran/Boulder EIS include Redhill and Boulder. The Elk Bugs and Fuels EIS discloses and analyzes the cumulative effects of these actions (Tables 71 and 72).
17-09	Forest-wide impacts on semi-primitive non-motorized ROS are outside the scope of this analysis.
17-10	The discussion of management areas (Chapter 1) has been improved.
17-11	The scenic integrity objectives used to manage scenic resources are determined at the forest-wide planning level. All action alternatives would meet Revised Forest Plan goals, objectives and scenic integrity guidelines. Reevaluation of elements of the scenery management system are outside the scope of this project.
17-12	Treatments to maintain hardwood stands are included in all action alternatives. See Chapter 2, Alternatives Considered in Detail – Vegetative Treatments – Commercial Hardwood Restoration, Noncommercial Hardwood Restoration

motes moist ground conditions and water recharge and requires less intensive management to be maintained as a fire break., and thus costs the tax payers less money.

Please map all aspen or birch stands and combine with a map of houses. Please also map all mixed aspen/pine or birch/pine stands in relation to houses. Couldn't you clearcut around existing aspen stands and have aspen stands expand around the sides? Please consider that as an option. Please evaluate and map all areas where clear cuts or seed cuts would be likely to respond with aspen regrowth instead of pine. 17-12

Could you sign memorandum of understanding with adjacent land owners where they plant aspen seedlings and perhaps even water seedlings to insure aspen seedlings succeed near homes. Please consider this as an option, where biodiversity concerns would not be negatively effected. Please map all areas where aspen could be grown around sub divisions and homes as aspen plantations. 17-13

Please also consider places where homes or subdivisions could maintain Forest Service owned meadows near their home. Please consider clearcuts to create meadows near subdivisions and consider plans that entrust, via memorandum of understanding, the subdivision/home owner with annual responsibility to mow meadow or otherwise kill pine seedling regrowth in this meadow fire break. 17-14

Also consider allowing home owners to cut down live small pole sized trees immediately around his/her home for fire wood. In other words, let the land owner and his friends thin out the "pre commercial" wood around his home, under a memorandum of understanding between Forest SErvice and himself/herself. 17-15

Of course none of these vegetation manipulations via land owner agreements should be considered where biodiversity values associated with rare resources, such as goshawk habitat, could be adversely effected. 17-16

Please create an alternative that maximizes aspen and meadows. 17-17

Fire Condition Classes & RNV

On page chapter 3-88 is displayed a chart of condition classes. Ratings are partly based on deviations form historical range. We have never accepted the RNV as portrayed in the Forest Plan. We believe the Forest Service is wrong to believe the entire Forest was in park like ponderosa pine stands managed by low intensity fires. We believe the historical record shows dense stands and evidence of stand replacing events, perhaps these stand replacing events were fires, perhaps beetles. We believe there was a mix of cool fires that created park like stands and either fire, bugs or wind throw events that created dense stands of even aged trees. We believe there are physiographic regions that effected likely hood of stand replacing events. 17-18

In your text on page 3-89 you criticize Shinneman and Baker (1996) for misinterpreting the Graves report. Nancy Hilding handed in a extensive review of the Forest Services RNV discussion that appeared in the DEIS. This review included similar criticisms of the Forest Service for also misinterpreting the Graves report. It also criticized the Forest Service for selectively quoting some historic sources and not quoting other contradictory sources. We incorporate the comments Nancy Hilding submitted on the RNV for the Forest Plan by reference. 17-19

Fire Prevention Debate

There is debate over whether the Forest Services theories over logging to prevent fire are correct. I will attach some documents that discuss this debate.

Sincerely,

Nancy Hilding
President, for
Prairie Hills Audubon Society.

Nancy Hilding
6300 West Elm
Black Hawk. SD 57718

As well as comments on behalf of our organization,
please also consider these comments as personal comments on behalf of myself as an individual

Comment	Response
17-13	The cover type of all forest stands in the project area was identified and is included in the Project File. Treatments to maintain hardwood stands are included in all action alternatives. See Chapter 2, Alternatives Considered in Detail – Vegetative Treatments – Commercial Hardwood Restoration, Noncommercial Hardwood Restoration. Proposed activities focus on areas near private lands (Table 6, Issue F).
17-14	Management of private land is outside the scope of this project.
17-15	Proposed actions may be accomplished using a variety of means, including timber sale contracts, service contracts, Forest Service crews, stewardship contracts, and agreements with private landowners.
17-16	Refer to response 17-14.
17-17	Hardwood treatments are included in Alternatives 2, 3, and 4, and meadow enhancement is included in Alternative 3 (Chapter 2). The original proposed action proposed more acreage of hardwood treatments than the modified proposed action or alternatives; rationale for modifying the original proposed action is disclosed in Chapter 2, Alternatives Considered but Eliminated from Detailed Study – Original Proposed Action.
17-18	Proposed treatments would address hazardous fuel conditions in the project area, particularly in the wildland-urban interface. The project fuels specialist used local weather records and topography to estimate the hazard and risk of wildfire to established values (Chapter 3, Physical Environment – Fire Hazard and Fuel Loading).
17-19	See Revised Forest Plan Appendix A (pp. A-12, A-13) for discussion of range of natural variability.

Appendix

10(j) of the Endangered Species Act of 1973, as amended (Act). They would manage this population under provisions of this proposed special rule. A draft environmental assessment has been prepared on this proposed action.
visit **http://mountain-prairie.fws.gov/ferret/** for details.
Also for more info: Scott Larson, U.S. Fish and Wildlife Service, telephone (605) 224-8693. -- Scott_Larson@fws.gov
TOPEKA SHINER - comments on critical habitat due about 10/20/02 **-- http://mountain-prairie.fws.gov/endspp/shiner/**

COMMENTS ON FIRE AND THE BLACK HILLS - - THAT YOU WON"T READ IN THE NEWSPAPER
Editorial by Nancy Hilding

Many S.D. leaders believe logged areas are more fire resistant and unmanaged forest areas are a fire risk. They blame fires on environmental community, saying that environmentalists stop timber treatments and thereby make the forest unsafe. Environmentalists and roadless areas are made the scapegoats and logging is the panacea.

To my knowledge the main determinant of fire behavior is quite simply the weather. Weather factors include:

1. the weather on the day(s) of the fire -- including things like wind and heat,

2. the microclimate weather created by the fire itself — things like the wind the fire creates and

3. the moistness of the forest that has been created by past weather.

Can the Forest be managed by logging to create stands of trees that are more fire resistant? Yes, aspen stands are more resistant to some fires and a forest could be managed to maximize aspen stands. Currently only 4% of the BHNF is in aspen and the Forest Service only plans to increase that by 10% or to increase it up to 4.4%. Aspen is not a commercial wood and maximizing aspen would reduce the area of the forest producing a commercial crop and reduce Allowable Sale Quantiy (ASQ). (The ASQ is the amount of wood that can be sold on the Forest each year.) Also intense grazing prevents aspen shoots from growing after fire or other disturbance. "Jackstraw" tree trunks on the ground can protect aspen shoots from grazing.

Can the pine stands be managed to make them more fire resistant? The proponents of logging don't tell you the whole story. Unmanaged stands offer some values that make them more resistant to fire and managed stands also have some values that make them more susceptible to fire.

In order to reduce the risk of beetle outbreaks the Forest Service cuts downs trees and opens up the stands, making them less shaded and more sunny and more exposed to wind One theory for why thinning stand reduces beetles is that the resulting microclimate of the opened stand is hotter. Beetles galleries grow more beetles on the north side of a tree. When the stand is hotter, it becomes less moist. So ironically, the forest conditions promoted as "healthy" because they limit beetles outbreak, also make the stand more susceptible to fires.

Yes, there is a short period of time when a beetle killed tree has flammable, dry, red needles on it. The red needles on a tree which was killed by beetles, will fall off within 2 years and fall on the ground to begin composting below the snags.(dead trees). .Nature quickly separates the flammable needles from the twigs and branches. During drought and winter dormancy green needles on a live pine trees can be just as desiccated and just as flammable as red needles on a dead pine. A drought creates the conditions (desiccated needles) throughout the live forest, while the beetles only create it in small subsets. After a timber sale the timber slash may lay on the ground with needles connected to branches/twigs. Thus a forest full of live pine trees and underlain with timber slash can provided especially ignitible fuel for both ground and crown fires. Conversely the beetle killed stands after a few years may provide open meadows, littered with fallen dead trees, and composted pine needles. During a summer drought, which is the greater fire hazard? Which has a greater risk of a crown fire?

Closed canopy dense stands get less sunlight and wind and are more moist and cool. Old yellow bark pine trees have thick bark, which is resistant to fire. The needles, twigs and branches, which are more flammable than tree trunks are higher up..The old yellow barks may have longer distances between the ground and the needles/twigs, making it harder for a ground fire to reach the crowns of the trees. Historically the low intensity ground fires could just sweep by the big yellow barks, without burning them. A large majority of the Jasper fire was in SS 3 b pine (stands of medium density sapling/pole stands)

When you log, you open the stand and make it hotter and more exposed to wind. The loggers may leave timber slash on the ground, which is exposed to this hotter and drier microclimate. After the stand is opened, saplings and small trees will sprout underneath. In fact timber sales are designed by the Forest Service to maximize this regeneration of seedlings. In stands of saplings and small trees, the distance from the ground to the more flammable needles/twigs is shorter than with a taller tree. The shorter trees can be the torches that ignite first and provide a ladder effect from the ground to the crown of the bigger trees. There can be a crown fire in stands of immature trees.

Timber companies will pay the taxpayer to log out large pine trees. The taxpayer has to pay the timber companies to cut down small trees. A nationwide backlog of smaller, more flammable trees, is a legacy of decades of a shortsighted logging program. It is promoted by Forest Service decisions to facilitate a maximum timber production -- not the appeals of the environmental community.

Logging to reduce crown fire risk by opening the canopy will create a vicious cycle. The first logging entry opens the canopy and as a result the more flammable small trees grow underneath. In order to pay for the thinning of all these new small trees, you subsequently will have to cut out more mature yellowbarks, that creates more small trees and in a few years you will have to cut more big trees, to pay for thinning more little trees. The forest is repeatedly opened up, desiccated and the big fire resistant yellow barks will be constantly replaced by a new crop of more flammable little trees. Except you eventually run out of tall, commercial trees in the area. Eventually you may replace a closed canopy of old yellow barks with a closed canopy of younger, shorter trees, which are closer to the ground and less resistant to fire.

The cycle is self-perpetuating and insures jobs for loggers and Forest Service employees and financial gains for logging companies, but in the long term doesn't create a more fire resistant forest. Some Forest Service employees have a vested interest

Exerpt from Oct 2002
Prairie Hills Audubon Soc. Newsletter

NANCY HILDING
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BLACK HAWK, SD 57718

to
LIZ KREEGER

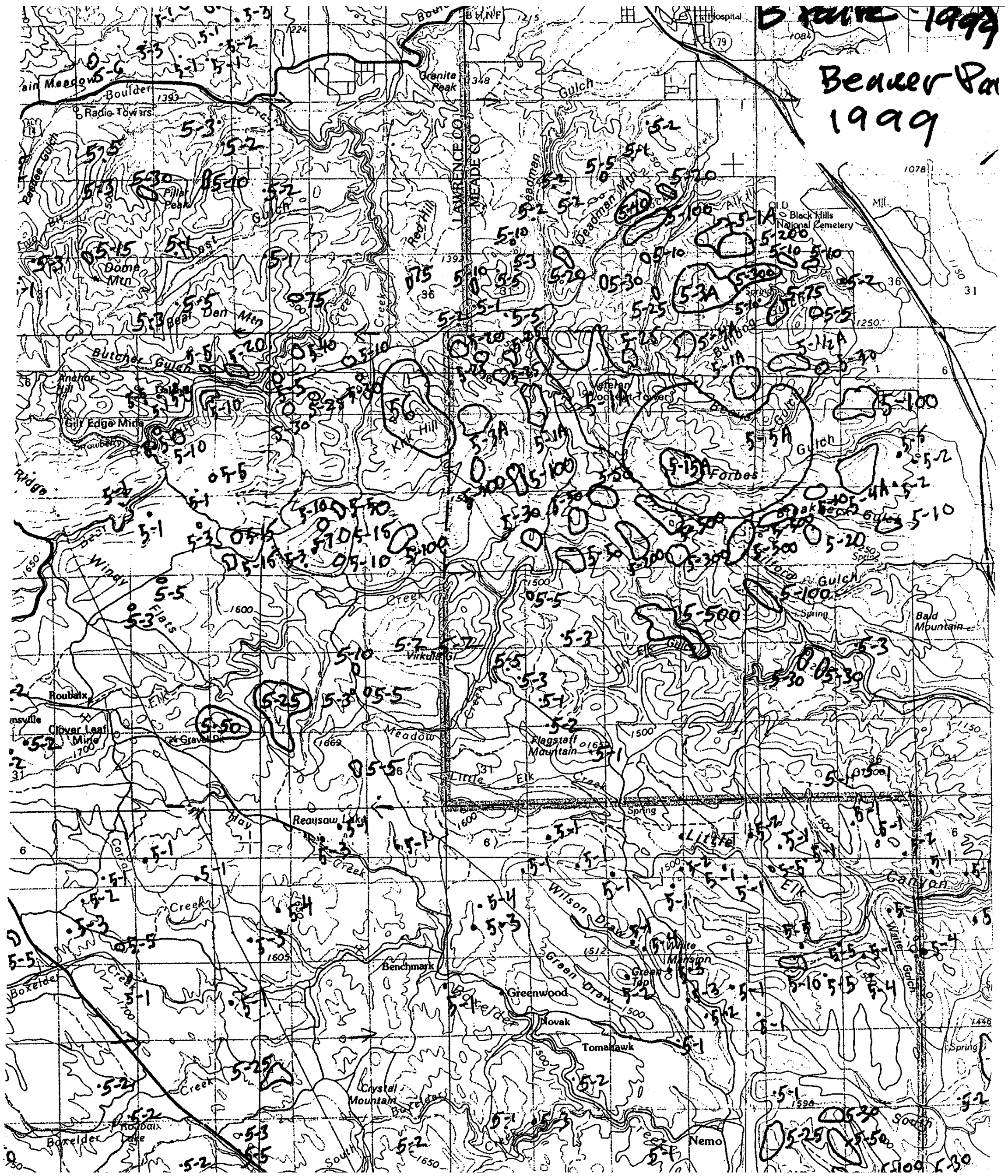
ELKS BUGS & FUELS

Somewhere in the DEIS, perhaps the summary, it blames the slow time it took to log Beaver park for the Beetle epidemic – or some words to that effect.

I am enclosing a map of battle areas circa 1999. Which bugs fly maybe ?2 miles? at the most. How can Beaver Park delay be responsible for all these bugs

Nancy

p.s. please don't scape goat


Beaver Par
1999
Granite Peak
Radio Towers
Boulder
Pillar Peak
Dome Mtn
Bear Den Mtn
Butcher Gulch
Anchor Hill
Gilt Edge Mine
Deadman Mtn
LAWRENCE CO
MEADE CO
Black Hills National Cemetery
Hospital
Red Hill
Kirk Hill
Forbes
Bald Mountain
Windy Flats
Virkula Gl.
Roubaix
Clover Leaf Mine
Gravel Pit
Flagstaff Mountain
Little Elk Creek
Reausaw Lake
Wilson Draw
Green Draw
White Mansion
Greenwood
Benchmark
Novak
Tomahawk
Crystal Mountain
Boxelder
Nemo
Canyon
Spring